

RESPONSES TO  
AVIAN AND HUMAN INFLUENZA THREATS

JULY – DECEMBER 2006

PART 1

PROGRESS, ANALYSIS AND  
RECOMMENDATIONS

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# PART 1

## Responses to Avian and Human Influenza Threats: Progress, Analysis and Recommendations

July – December 2006

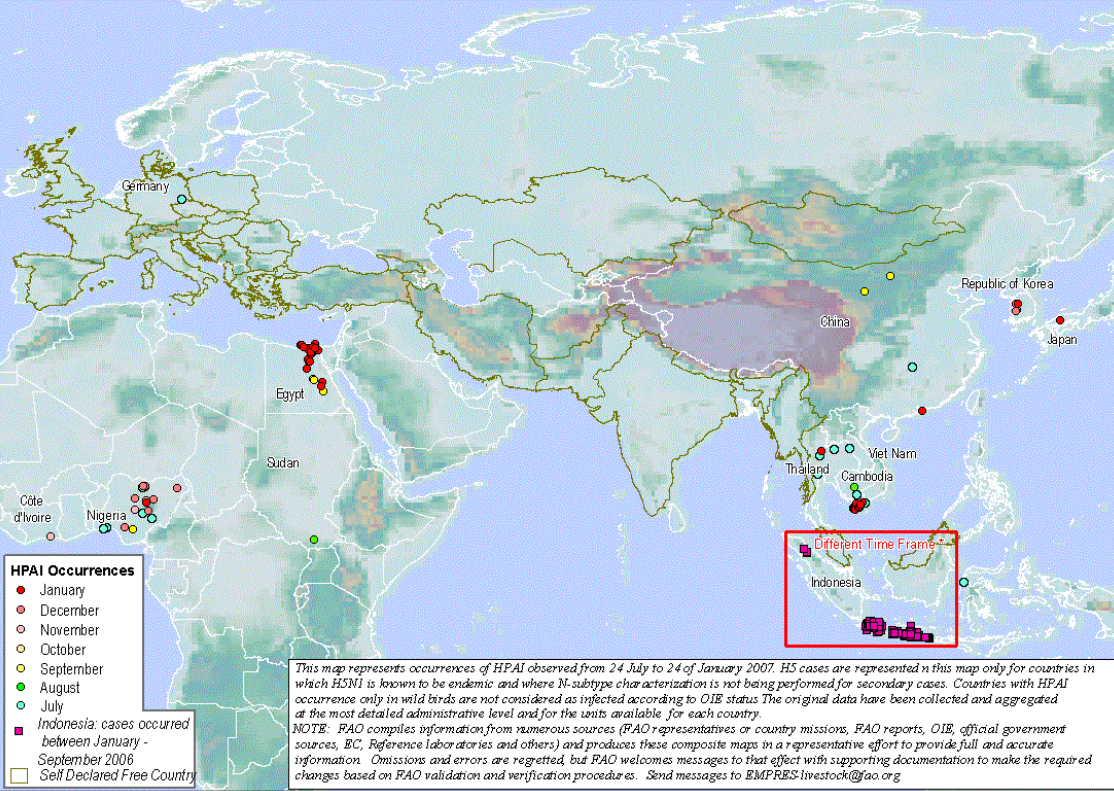
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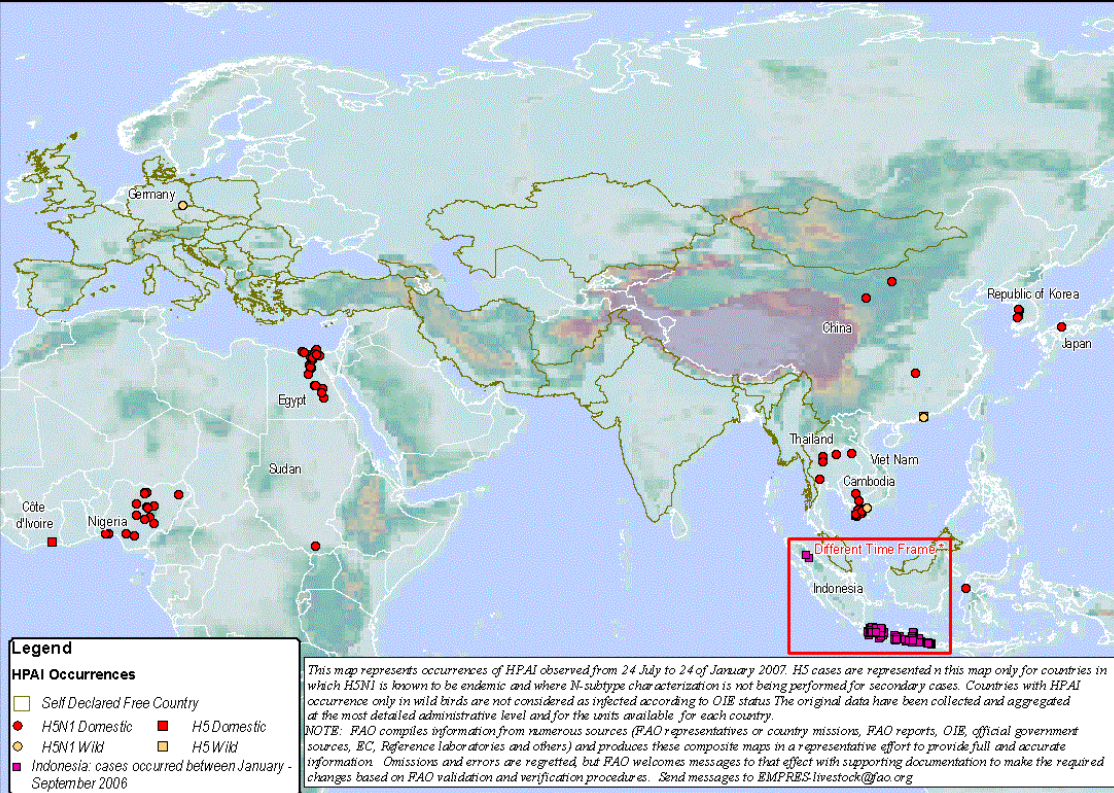
## Abbreviations

AI	Avian Influenza
AHI	Avian and Human Influenza
AHITF	Avian and Human Influenza Task Force
ALive	African Livestock Partnership
AU-IBAR	African Union – Inter-African Bureau for Animal Resources
CIRAD	Centre de Cooperation Internationale en Recherche Agronomique pour le Développement
EAP	East Asia Pacific
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit – German Development Agency
HPAI	Highly Pathogenic Avian Influenza
IASC	Inter Agency Standing Committee
IFRC	International Federation of the Red Cross and Red Crescent Societies
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association (of the World Bank)
IMF	International Monetary Fund
INGO	International Non-Governmental Organisation
IPAPI	International Partnership on Avian and Pandemic Influenza
MDF	Multi-Donor Trust Fund
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOH	Ministry of Health
NGO	Non-Governmental Organisation
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OFFLU	OIE/FAO Network of Expertise on Avian Influenza
OIE	World Organisation for Animal Health
PPE	Personal Protective Equipment
RC	United Nations Resident Coordinator
SD	Standard deviation
TACIS	Technical Aid to the Commonwealth of Independent States
UNDG	United Nations Development Group
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Children’s Fund
UNSIC	United Nations System Influenza Coordination
USAID	United States Agency for International Development
USCDC	United States Centres for Disease Control
WFP	World Food Programme
WHO	World Health Organisation
WCS	Wildlife Conservation Society

**HPAI outbreaks : Outbreaks reported in poultry and cases in wild birds**  
**Six Months Period (24 July 06 - 24 January 07)**



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## EXECUTIVE SUMMARY

1. The rapid spread of the H5N1 strain of avian influenza during the first half of 2006 has continued through the rest of the year although at a slower pace. By 25<sup>th</sup> January 2007, since late 2003, there had been 4544 outbreaks in poultry in 36 countries, and 269 human cases including 163 fatalities. The rising trend in outbreak incidence, and the unusual persistence and continued diversification of this virus pose twin threats to livelihoods and to human health. Much remains to be understood about the behaviour of this virus, its virulence and evolution; but the longer it persists in the natural environment, there is always the chance that a mutation will occur that is associated with sustained transmission between people and possibly become the cause of an influenza pandemic.
2. Governments worldwide now recognise the nature of these risks. In June 2006, it was clear that national authorities and international agencies had made substantial efforts to prepare for the impact of avian and human influenza. There was also consensus on the importance of international cooperation through regional and other organisations for coordinated pandemic preparedness. National authorities with fewer resources and more restricted implementation capacity faced particular challenges in strategic avian and pandemic influenza planning and the implementing of such plans. Public information and communications would play a critical role in ensuring behavioural changes required for an effective public health response.
3. Analysis of the evidence available in June suggested that integrated national avian and human influenza plans would depend for their successful implementation on a number of factors. These were:
  - a strong commitment to ensuring their implementation at the highest political level, accompanied by effective leadership of all concerned stakeholders;
  - clear procedures and systems for managing the rapid implementation of priority actions;
  - primary attention to improved functioning of veterinary and human health services at all levels, with a transparent approach to the sharing and dissemination of information about suspected disease outbreaks, immediate efforts to establish their cause, and prompt responses (including restriction of movement of animals that are at risk);
  - incentive and/or compensation schemes combined with effective communication to communities on the importance of immediately reporting disease outbreaks in animals to responsible authorities;
  - effective mobilisation of civil society and the private sector;
  - national mass communication campaigns that promote healthy behaviour and focus on reducing the extent to which humans might be exposed to HPAI viruses.
4. This report presents evidence on the progress made by national authorities and other agents over the past six months. The standardised information-gathering exercise applied in May-June 2006 was with some revisions repeated in October-November. New and in some cases corrected data were obtained from 80 national authorities. Systematic comparison with the evidence obtained for June indicates evidence of progress in a number of respects. There continues to be a high level of engagement by national authorities in AHI planning; and in some regions of the world more integrated plans have now been endorsed by governments, although the extent to which plans are test exercised remains relatively modest.
5. Globally in the animal health sector, there have been some significant enhancements in avian influenza detection capacity, surveillance and reporting systems, trans-boundary disease controls, poultry vaccination policies, and poultry compensation arrangements.
6. In the human health sector, there is evidence for global enhancements in surveillance and reporting systems; and the information obtained is consistent with increased numbers of health care workers trained in highly pathogenic avian influenza, with rising availability of personal protective equipment, and with growth in planned population coverage by anti-viral stockpiles. On the other hand, some authorities which in May-June 2006 had planned to purchase a pandemic vaccine appear to have been unable to make specific provision for this. While there has been substantial regional activity in

coordinated pandemic preparedness planning, there appears to have been relatively little publicly explicit policy-making on the non-health-related elements of pandemic containment and mitigation. All regions of the world have seen some mass communications campaigns, although this varies considerably across regions and countries; and further work is needed to evaluate the evidence for their impact in raising public awareness and changing behaviour.

7. In June 2006 it was agreed at the Vienna conference that subsequent reporting would include country-by-country analysis. The country profiles contained within Part 2 of this report indicate the extent to which there is variation in strategic implementation capacity and in the presence of the six success factors. In essence, the findings here highlight the limited implementation capacity of many national authorities in the regions of Africa and the Asia-Pacific but also the potential for this challenge to be addressed by concerted action by the international community in accordance with the principles adopted at Beijing in January 2006. The success factors provide a benchmark for this challenge.
8. This report identifies as priorities for international action in 2007: firstly to sustain the political commitment for national and international action: the risk of complacency cannot be taken. Secondly, capability for rapid reporting and response needs to be more equitably distributed across countries and regions than is currently the case. Third, there is wide variation in mass communications activity and social mobilisation on AHI, and a need to identify and implement optimal methods for sustained impact on behaviour. Fourthly, there is much scope to build on social mobilisation to promote engagement of government with non-governmental sectors in policy planning and implementation. Fifthly, the joint UN System and World Bank approach has a strong influence on the ways in which governments and the international community operate, and it is critical to coordinated implementation support. Sixthly, the evident limitations in human and technical capacity argue for concerted international action on rapid detection methods, response implementation protocols, and approaches to mitigate the adverse social impact of measures particularly among vulnerable groups. Finally, the international community is asked to pledge and then commit additional funds that will permit the maintenance - and intensification - of the efforts described in this report.

## SECTION 1: BACKGROUND

9. Recent widespread transmission of the H5N1 strain of avian influenza among birds has generated unprecedented response in anticipation of a potential global influenza pandemic. First surfacing in Hong Kong in 1997, H5N1 avian influenza remains largely a disease of birds with sporadic infections among humans who have had contact with infected fowl. Between the end of 2003 and 25<sup>th</sup> January 2007, OIE recorded 4544 outbreaks of H5N1 avian influenza in poultry in 36 countries. A resurgence of human disease in 2003 has not abated and WHO now reports 269 human cases of H5N1 influenza worldwide, of which 163 have been fatal (as of 25<sup>th</sup> January 2007). Risk factors for infection have yet to be clarified with much still unknown about the behaviour of this novel disease in humans. The current Pandemic Alert Phase remains at level 3 in WHO's Global Influenza Preparedness Plan.
10. Highly Pathogenic Avian Influenza (HPAI) H5N1 continues to be a threat to animal health, the poultry industry and, rarely, to human health. In the last four months outbreaks have been confirmed among poultry in China, Thailand, Laos, Russia, Egypt, Sudan and Nigeria, Vietnam, Korea and Japan while the virus is enzootic in much of Indonesia. Livelihoods of those who lose birds as a result of disease or from control measures continue to be adversely affected. In addition, there is still a significant chance that this virus will become capable of sustained transmission between humans, which is increased each time someone is infected.
11. Relative to a year ago, the capacity for surveillance and response within individual countries has increased dramatically, governments appear to be reporting outbreaks promptly, human cases of avian influenza are being detected, and, barring a few exceptions, avian influenza outbreaks in birds are quickly being stamped out at source when they are detected.
12. Following several key gatherings, including the Avian and Pandemic Influenza Senior Officials Meeting in Washington, October 2005, the Global Meeting on Avian Influenza and Human Pandemic Influenza in Geneva, November 2005, the International Pledging Conference in Beijing, January 2006 and the Vienna Senior Officials Meeting on Avian and Human Pandemic Influenza in June 2006, a shared vision of coordinated global tracking and response has become further streamlined. This report, available in draft in time for the Senior Officials Meeting in Bamako in December 2006, builds on developments made since the first six monthly report of progress on pandemic preparedness, namely the *Responses to Avian and Human Influenza Threats: Progress, Analysis and Recommendations January – June 2006*, which was presented in Vienna.
13. This initiative is an important inter-governmental framework for sustaining high-level political commitment. The UN system and World Bank are consistently supporting this process with stock-takes of progress and resource requirements at country, regional and global levels, focusing on policy issues which are identified by national officials as needing special attention, and tracking donor funding.
14. Integrated national plans developed by governments have focused on four action areas: (a) the improvement of animal health, (b) functioning public health systems, (c) coordinated action for pandemic preparedness and (d) social mobilisation and communication. Funds for action are being sought from national treasuries and external sources. The core principle of the Financing Framework established in Beijing in January 2006 states that external support would be available upon appraisal of the national plans by a combination of development bank and UN system expertise. Portions of the \$1.9 billion pledged in Beijing are now being programmed in more than 40 countries in support of country, regional, and global level programmes. However, the demand for funds far outstrips their availability.
15. The UN itself is now much better prepared for pandemic conditions and working more harmoniously than it was six months ago. This has been assisted in large part by the UN System Consolidated Action Plan, released in June 2006, (revised November 2006) which identifies objectives for achieving a shared vision of a coordinated global response in tackling avian influenza and preparing for a human pandemic. More than 133 UNCTs have prepared plans, medical assessments of mission



response capacity are underway, the work has been audited, and the system as a whole is now focused and acting on an issue which, a year ago, was a completely new concern. It is anticipated that pandemic preparedness work within the UN system will be mainstreamed into wider crisis preparedness work within the UN and among its partners.

16. The present report reaffirms the importance of commitments in the effort against avian and pandemic influenza. It also provides an evaluation of progress and movement towards the objectives made in the last six months and adds information for future comparisons of trends.

## SECTION 2: REPORTING ON PROGRESS

17. The last report concluded by identifying six areas that need further attention. These include:
  - support for better prevention and control programmes highlighting strengthening of surveillance, detection and early reporting, bio-security, strategic vaccination with good quality controlled vaccines, investment in veterinary diagnostic laboratory capacity, better practices in animal health including farms and in market place activities: the prevention and control of trans-boundary diseases needs a long term and sustainable strengthening of veterinary services and an analysis of poultry sector restructuring options;
  - protection of human health through rapid response mechanisms, pandemic containment, investment in human diagnostic laboratory capacity, sharing information and ensuring access to vaccines and antivirals;
  - innovative development efforts in vaccine and diagnostics fields with emphasis on full sharing biological materials and sequences with systematic international action in epidemiology, virology, the social sciences and among governments, researchers and manufacturers;
  - support behaviour changes which reduce risks to health, livelihoods, livestock and economies through local and international efforts in consistent information, education and communication campaigns;
  - mitigation of socio-economic impacts, particularly on poultry-keeper livelihoods, of avian influenza through development of fair and equitable incentive structures and compensation mechanisms; and
  - reinforcement of a flexible financing framework by the international community for timely and predictable external assistance, improvements to fund distribution systems, training and deployment of veterinary and human epidemiologists and health workers as well as preparation of plans and priority identification by countries requesting aid.
18. This report, as well as providing an update on progress, focuses in detail on some of the issues identified in June 2006. It is divided into two parts. Part 1 reports on progress during the six months from June – December, 2006. It focuses particularly on: institutional arrangements for implementation and coordination; priorities for international action, including the technical content of the response; and human and financial resources to deliver priority actions. This therefore gives an overview of the state of responses to avian and pandemic influenza threats, description of responses at country, regional and global levels and analyses of the progress in efforts to tackle avian influenza. It also identifies substantive gaps in response efforts, and makes recommendations including for shifts in national policies, alterations in the level and intensity of international support, and assessment of the ability of existing coordination mechanisms to promote harmonised action and support strategic changes in emphasis so as to increase synergy.
19. As decided in Vienna in June 2006, this report provides (in Part 2) a country-by-country analysis of avian and pandemic influenza preparedness. For each country, profiles have been developed using the framework of success factors for AHI preparedness identified in the January 2006 UN system AHI strategy and detailed in the June 2006 progress report (paragraph 6). Framed in this way, the country profiles form a useful basis for assessing current preparedness activity, constraints and needs. These also contribute to regional analysis of preparedness. The six success factors are:
  - a strong commitment to ensuring their implementation at the highest political level, accompanied by effective leadership of all concerned stakeholders;
  - clear procedures and systems for managing the rapid implementation of priority actions;
  - primary attention to improved functioning of veterinary and human health services at all levels, with a transparent approach to the sharing and dissemination of information about suspected disease outbreaks, immediate efforts to establish their cause, and prompt responses (including restriction of movement of animals that are at risk);

- incentive and/or compensation schemes combined with effective communication to communities on the importance of immediately reporting disease outbreaks in animals to responsible authorities;
  - effective mobilisation of civil society and the private sector;
  - national mass communication campaigns that promote healthy behaviour and focus on reducing the extent to which humans might be exposed to HPAI viruses.
20. Consistent with the previous study, information contained within this report has been drawn from various sources including meeting summaries, UN country team reports and direct communications with UN country teams and members of individual governments.
  21. The comprehensiveness of the analysis is influenced by the quality and coverage of data obtained through a data gathering exercise initiated on 3<sup>rd</sup> October 2006. This study is similar and complementary to the exercise performed in May-June 2006<sup>1</sup> and presented in the previous report. This exercise consisted of a short series of questions on preparedness sent to 144 UN Country Office Resident Coordinators, including Avian Influenza Focal Points, and to representatives of 22 national authorities without UN RCs. As a number of UN country offices cover several countries, coverage was sought for some 200 national authorities. In total, 80 responses were received in this second exercise and have been used in the current analysis, together with responses for other countries from the May-June exercise.<sup>2</sup> The detailed country profiles have also been reviewed by national authorities.
  22. As a result, the analysis presented here focuses first on outlining progress globally, using data aggregated from countries for which there is information available either from May-June, or from October-November, or from both periods. Secondly, it seeks to identify tentative evidence of change over time at a regional level by comparing results from the first and second information-gathering exercises. Thirdly, it details findings from new questions posed in the October-November exercise. Data used in preparing the June report have been corrected where the need for this has been made clear by subsequent advice from governments and UN country teams. Aggregated data are used where these are judged to be the most robust general evidence on regional and global preparedness; and the illustrative graphs and tables are collected together in Annex II.
  23. This report, like that of June, does not intend to compare countries with each other. There has been no independent validation of the responses to assess the reality of preparedness and capacities for emergency response. These reports cannot be used to provide a definitive and comprehensive summation of avian influenza response and pandemic preparedness activities to date. The UN System Influenza Coordinator will retain responsibility for the overall content of the report.

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<sup>1</sup> For this report, data were obtained using a questionnaire provided to UN country representatives. The quantification is provided to illustrate points made in the text.

<sup>2</sup> The reader is directed to the first joint report *Responses to Avian and Human Influenza Threats: Progress, Analysis and Recommendations January – June 2006* by UNSIC and the World Bank for details of the methods used in the May-June data gathering exercise. <http://www.undg.org/content.cfm?id=1648>

### **SECTION 3: DEVELOPMENTS SINCE JUNE 2006**

24. This part of the report looks at progress of responses to avian influenza and the threat of a pandemic.

#### **3.1 OVERALL ANALYSIS OF PROGRESS**

##### **GLOBAL OVERVIEW**

25. The global overview is based on a range of sources including the responses to two information-gathering exercises. One response set comprises data for a group of 67 national authorities for which direct comparison can be made between the May-June and October-November information-gathering exercises. The second comprises the full set of responses for 80 national authorities provided in October-November, which can be broadly compared with the larger data set reported in June for around 140+ countries. This overview summarises global trends and distinguishes between regions where the data permit.
26. The overall status of integrated country plans has remained similar between May-June and October-November. Nearly 60% of national authorities have endorsed country plans and a little more than 40% have plans in process, suggesting that much has been achieved but that further progress is needed to complete the planning process. Among the 67 countries represented in both periods of information gathering there has been a 20% increase in plan endorsements, with particular progress in Africa, the Asia-Pacific, and the Americas.
27. There is a generally continuing and high level of engagement by national authorities in AHI planning. However, the comparisons in Table 1 suggest that in all regions of the world there have been fewer meetings held by AHI task forces in the six months to October than in preceding half year. While this could reflect the achievement of major stages in planning, it is also possible that the perceived urgency of the problem has lessened along with a seasonal fall in incidence of avian influenza outbreaks in birds and of cases in people. The risks posed by any emergent complacency must be avoided.
28. There is much scope for testing plans through simulation exercises. Both in May-June and in October-November, country plans have been tested by relatively few national authorities in Africa and in the Middle East and North Africa (Figure 1). Elsewhere there has been greater activity but progress in this respect remains moderate. Since June 2006, 33 of the national authorities polled have undertaken simulation exercises of national plans, indicating a continued level of activity in this respect.
29. Integrated country plans tend to focus on the following 4 areas of intervention:
- improved animal health through bio-security and veterinary services;
  - human public health systems for detection and containment of human infections with a Highly Pathogenic Influenza Virus;
  - mobilisation for community action through risk communication; and
  - preparation for social and economic consequences of the next influenza pandemic, focusing specifically on:
    - a. “One Government Responses” – characterised by synergy across government and with civil society, private sector and media partners;
    - b. Procedures to ensure continuity of access to basic services, of rule of law, of financial services and of societies; and
    - c. Increased capacity for large-scale humanitarian relief.

### 3.2 IMPROVED ANIMAL HEALTH THROUGH BIO-SECURITY AND VETERINARY SERVICES

30. To what extent are countries promoting a sustained improvement in **Animal Health** through better surveillance, enhanced bio-security and control of movements, rapid detection and reporting of disease, and the delivery of a prompt response through recommended methods of culling, movement restrictions, appropriate levels of poultry vaccination and other measures to reduce virus transmission?
31. There is substantive evidence of recent progress in a number of these respects. Figure 2 and Figure 3 suggest that at the global level there have been considerable gains in overall expertise and laboratory detection capacity, strengthening of bird surveillance, AI related border controls, and measures to manage contact between different animal species. Detection capacity and bio-security remain areas in which there is substantial scope for further progress. National authorities report that for investments within the countries in each region there is convergence on several issues. These include increased capacity for outbreak investigation and laboratory confirmation (Figure 4). The picture is broadly the same when comparison is restricted to the same national authorities at each period. The data on numbers of veterinary AI laboratories are also promising although there are relatively few countries represented in each region (Table 2).
32. This global analysis is substantiated at regional level by the patterns of evidence shown in to Figure 8. Comparison between regions for national authorities represented in both information-gathering exercises shows essentially the same picture. There is scope for further progress in all regions but this would appear greatest in Africa, and in the Middle East and North Africa.
33. Differentiating between planning for and implementation of these measures (Table 3), suggests there have been higher levels of implementation of border controls and inter-species contact measures in the regions of Asia-Pacific, Europe and Central Asia than elsewhere. This probably reflects the concerted response of authorities to the rapid spread of H5N1.
34. The place of poultry vaccination is the subject of considerable work and policy debate at present. Recent OIE and FAO work on guidance, and a broad assessment of the current science, are summarised further in section 5 of this report. The activity of national authorities indicates increased planning or implementation of programmes to vaccinate poultry over the interval between May-June and October-November, as illustrated by comparison across regions in Figure 8. Comparison across regions for national authorities represented in both periods strengthens this picture, with particularly pronounced increases in the Asia-Pacific (50% → 70% of 10 countries), Middle East and North Africa (0% → 50% of 8 countries), and Europe and Central Asia (12% → 41% of 17 countries); and again this probably reflects the response to the rapid spread of H5N1.
35. While this suggests a growing acceptance of the policy option to vaccinate, there remain substantial differences across regions. The implementation of such programmes remains relatively infrequent (Table 3). Effective monitoring of vaccination is critical to understanding the impact of bird vaccination, its contribution to disease control, and to control the possible virus circulation.
36. In addition to these elements of planning and capacity building, there has also been a significant level of training of veterinarians and of village veterinary workers since June. The numbers of national authorities reporting these activities are relatively small, and it is not appropriate to seek to generalise from the reported average numbers of trainees shown in Table 4. Nevertheless, the activity taking place since June 2006 and the more global take-up of the concept of village veterinary workers (which in June was found to be largely confined to the Asia-Pacific region) are both encouraging developments. These findings also suggest that there is great scope for further progress.

### 3.3 HUMAN PUBLIC HEALTH SYSTEMS FOR DETECTION AND CONTAINMENT OF HUMAN INFECTIONS WITH A HIGHLY PATHOGENIC INFLUENZA VIRUS

37. To what extent are countries strengthening **Human Public Health Systems** to make them capable of detecting and containing human infections with a Highly Pathogenic Influenza Virus? Dialogue with national and international authorities suggests that many countries have made major investments in systems for the reporting of suspect cases of influenza-like illness. This is substantiated by the global comparisons in Figure 9.
38. Activity at a regional level is consistent with this global picture. The analysis illustrates the particular gains made among African, European, and Asian countries (Figure 10); and this picture is broadly consistent with that of national authorities represented in both periods of information gathering. There have been further developments in the issue of guidance for clinical case management in Europe and Asia (Figure 11); and most national authorities are now planning or implementing measures to trace contacts of human cases (
39. Figure 12). These initiatives are now able to build on the case definitions for human infections with H5N1 influenza.<sup>(119)</sup> The broader general intention, in the wider context of the International Health Regulations, is to ensure that national authorities can share standardised assessments with WHO and other partners.
40. However, it is not clear to what extent the performance of surveillance and response systems is consistent for most populations within each country. In countries with highly federated governance, consistency is hard to maintain; and this is a matter for systematic expert assessment and appraisal. WHO, together with a range of regional and national bodies, is helping countries improve performance of systems for surveillance and response to influenza-like illness (usually within the context of other well-established disease surveillance initiatives - such as for suspected cases of poliomyelitis). Once the outbreak investigation indicates a high likelihood of sustained human-to-human spread of an influenza virus, if circumstances permit national authorities will implement a containment strategy within the context of the International Health Regulations and with the full support of the World Health Organisation. Rapid containment efforts would involve use of antivirals and other public health measures to limit spread of the disease. Implementation of rapid containment requires a high degree of planning. If rapid containment is not successful in preventing development of a pandemic then countries would, if possible, take steps to mitigate the effects of a pandemic to reduce mortality and enable the public health response. During the last few months many countries have developed and tested their plans, including in some cases their capacity to contain a pandemic in its early stages. It is critically important that national authorities undertake and learn from such exercises.
41. Rapid response systems depend on efficient detection of influenza-like illnesses and reporting. Data suggest that between May-June and October-November the number of countries with capacity to detect HPAI in human cases (trained local reporting suspicious incidents, skilled capacity for follow-up investigation and for reliable rapid laboratory analysis) has increased. The total number of veterinary diagnostic laboratories appears generally greater (Table 2) but diagnostic capacity for humans has remained broadly stable since June (Figure 9). The major technical issue here is the need for rapid, sensitive, specific and affordable diagnostic tests for bed-side use (see section 5).
42. Increased numbers of health personnel in the private and public sectors have been trained in the detection of influenza-related illnesses – an observation confirmed by data from 33 countries in different regions for the period since June this year (Table 5). Aggregating the numbers of trainees (clinical and village health workers) across sectors, and standardising them to the most recent estimate of the number of physicians per head of population, indicates the training of a median average of 55 trainees per physician per 1000 population. This group of countries has a median average of 1.1 (range 0.0 to 4.1) physicians per 1000 population, compared to a global average of 1.6. While the numbers of countries and trainees covered by this analysis are again small, it is encouraging that these activities are being undertaken globally and with a sense of urgency.

43. Supplies of Personal Protective Equipment (PPE) are critical to a rapid response, and to the longer term containment and management of a pandemic. At a global level, there has been since June 2006 an increase in planning for or implementation of PPE use to the point that now almost all countries have such intentions (Figure 13). The regional analysis indicates that this applies across most regions except for the Americas (Figure 14). This would make sense given that these are the regions which have so far had to deal directly with highly pathogenic avian influenza outbreaks.
44. The global data for 29 countries suggest that there are at present available for AHI use a median average of 313 PPE kits per million population (range 3 to 8075). The data on 44 countries from May-June 2006 indicated then a median of 153 per million (range 0.2 to 50,000). Thus there is evidence to suggest an increase in the average availability of PPE for personnel potentially exposed to dangerous pathogens. Bilateral assistance appears to have been a significant source of this. Although differences between levels of response in each region would confound more detailed analysis of PPE availability, the planned use of PPE tends to exceed implementation in all regions (Table 6). Given the speed with which a pandemic could spread, it would be prudent for all countries to have plans for the use of PPE in their responses.
45. Anti-viral stockpiles are another critical element of the response (Figure 13). Global mean and median averages of stockpile size expressed as percentage cover of the 2005 population are indicated for May-June and October-November 2006 in Table 7. This provides tentative evidence consistent with an increase in cover. It also suggests that planned stockpiles would generally cover far fewer than 5% of populations, raising questions about principles of priority allocation and the logistics of deploying scarce supplies for which further strategic guidance would be valuable.
46. Most national authorities for which data were available in May-June indicated that they had plans to purchase vaccine in the event of an influenza pandemic (Figure 15). During October-November 2006, however, authorities were asked whether provision had been made for pandemic vaccine purchase, whether in the national plan or in any official declaration following its issue. The aim was to establish whether national authorities had taken formal steps to identify a potential supplier, and either set funds aside or identified a source of funding.
47. Although there were some differences in the countries polled on the two occasions, in Africa, the Middle East and North Africa, and the Asia Pacific regions the proportion of countries providing for vaccine purchase was considerably smaller in October-November 2006 than that planning to purchase according to the data five months earlier. In the Americas, and in Europe and Central Asia, the proportion of countries providing for vaccine purchase was similar or slightly higher in October-November and in May-June. Comparison of national authorities represented in both periods of information gathering indicates that this picture broadly holds: thus, authorities in the Asia-Pacific (by 3/11) and in Africa (by 3/9) show a substantial fall in the October-November 2006 response compared to May-June; although the position for other regions is essentially stable. While the global comparison is not statistically significant, the regional findings are consistent with some national authorities facing difficulty in translating plans into resource commitments. There could be varied explanations for such difficulty, including the cost in advanced investment or purchase agreements, time-scale to availability, and the likelihood of impact on an emergent pandemic.
48. On the other hand, the proportion of national authorities planning to produce a pandemic vaccine has changed (statistically) significantly from 20% (23/114) in May-June to 33% (22/67) in October-November 2006. This suggests optimism in some quarters. Regional comparisons of the same national authorities between periods indicate that this change is apparent in the Middle East and North Africa, and in Europe and Central Asia.

#### *Preparedness for pandemic containment*

49. The June 2006 progress report provided a baseline overview of avian and human pandemic influenza preparedness at regional and global levels. In tackling these threats, significant progress was identified both nationally and internationally, and particularly since January 2006. For instance, despite the

existence of gaps in preparedness efforts, nearly 100% of responding countries in all regions had pandemic preparedness plans in process or endorsed by government, with half of them already tested in simulation exercises. Repeating the data gathering exercise five-six months later, this report provides further evidence of preparedness planning, progress made since the earlier baseline and new and continuing areas for priority action.

50. The current view is of a still somewhat uneven picture of pandemic preparedness. Whether comparing country information for the same states between May-June and October-November 2006, or for all countries covered by each exercise, there is evidence of progress in planning, in test exercising of plans, and in a number of measures of capacity-building activity over the past six months. On both occasions, a standard array of risk-based health and non-health indices were used to describe and assess the overall level of preparedness and capacity to respond to AHI threats. The WHO's pandemic preparedness checklists for human health,<sup>(120)</sup> and related guidance for creating, tracking and validating plans,<sup>(121,122,123)</sup> provide an overall framework for orientating preparedness for communicable disease risks including pandemic influenza.
51. The non-pharmaceutical and non-health system dimensions of pandemic preparedness are complex, sensitive, and affect all parts of society. Perhaps in consequence these have received less systematic public attention by national authorities and agencies. However, regional meetings during the second half of 2006 have enabled national authorities, multilateral and bilateral agencies to identify more precisely and systematically significant gaps in pandemic preparedness and the resources needed to bridge them. These initiatives have built on earlier work. For example, the WHO's 2005 assessment of preparedness in Africa<sup>(112)</sup> noted two major issues: the need for excellent surveillance, logistics and enforcement capacity to underpin implementation of rapid containment strategy; and the need for mechanisms to communicate messages to the public based on recommended non-pharmaceutical measures. Consequently, a regional rapid response network has been established, with support from the Global Outbreak Alert and Response Network, and a network of influenza laboratories in Africa. Guidelines for pandemic communication with the media have been published.<sup>(112)</sup> Thirty-six African countries have established District-level priority disease reporting systems which can build up local capacity, form links between health and veterinary extension services, and facilitate rumour surveillance and verification.
52. In this context, the Southern African Development Community's draft analysis<sup>(91)</sup> identified the following weaknesses and threats which (excluding the specifically avian elements) directly concern pandemic preparedness:
  - a. Fragmentation of surveillance systems weakening the system, cooperation and collaboration.
  - b. Inadequate trained human resources.
  - c. Lack of SADC preparedness plan.
  - d. Ineffective enforcement of existing legislation.
  - e. Inadequate public awareness.
  - f. Lack of antivirals and vaccines.
  - g. Over-burdened health systems.
  - h. Inadequate surveillance and control infrastructure.
  - i. Increasing cross-border and global movement of people.
  - j. Poverty and food insecurity.
53. The SADC plan therefore sets out to harmonise policy guidelines and control measures in the event of an outbreak, through coordinated international collaboration, preparedness and response activities. While the plan seeks to address both avian influenza and pandemic-related issues, and acknowledges ways in which health and veterinary sectors can collaborate in practice, it envisages the following objectives specifically for pandemic preparedness:
  - a. strengthened early warning surveillance systems through participating laboratory networks;
  - b. joint procurement and rapid distribution of vaccines and antivirals;
  - c. promotion of seasonal influenza vaccination for vulnerable groups;



- d. facilitated mobilisation of resources and implementation of containment strategies;
  - e. monitored implementation of the IHR, OIE standards and WHO containment strategy;
  - f. coordinated assessment of resource requirements;
  - g. regional resource mobilisation strategy and appeal for funds; and
  - h. development and implementation of regional communication and health promotion strategy.
54. In Asia-Pacific, which is considered to be a potential epicentre for a pandemic given the overwhelming human and animal H5N1 cases, several different regional institutions have become driving forces to promote pandemic preparedness. The Asia-Pacific Economic Cooperation (APEC), comprising 21 member economies in the region, conducted a Pandemic Response Exercise in June and a post-exercise workshop in August 2006. The exercise reaffirmed the need for APEC to continue to work in partnership with a range of other response and international and regional efforts. It also identified building links with the business community and working to reduce the effects of a pandemic on economic activity and welfare as key roles for APEC <sup>(42)</sup>.
55. APEC also promotes pandemic preparedness for non-health sector through a project called “Functioning Economies in Times of Pandemic”. This project identifies the following seven cross-cutting themes, and the related issues and actions underpinning these themes, which are pivotal to maintaining functioning economies in times of pandemic.
- a. Integrated Planning and Preparedness
  - b. Coordination and Cooperation
  - c. Leadership and Governance
  - d. Communication and Information
  - e. Essential Services and Vital Supplies
  - f. Financial Systems
  - g. Movement Between and Within Economies
56. It is anticipated that the best practice protocols/guidelines will be agreed among APEC member economies and launched in the first part of 2007. Project papers are available at the [apec.org](http://apec.org) web-site.
57. The Association of Southeast Asian Nations (ASEAN), another key institution in the region, also plays an important role for regional preparedness. Among various AHI related projects, one prominent activity for pandemic preparedness is the stockpiling of 500,000 courses of antivirals and 700,000 sets of PPE. These stockpiles are already installed in Singapore, and expected to be used for rapid response and containment in close collaboration with WHO. For Mekong sub-region, Mekong Basin Disease Surveillance Project (MBDS), an inter-governmental project among six countries in the region, with technical input from WHO and RAND Corporate have conducted table-top exercises in six countries in late 2006, and plan to conduct a regional table-top exercise in early 2007.
58. Pacific island countries and territories, which were hit hard during the 1918-19 pandemic, are gearing up their preparedness through various means including a project called Pacific Regional Influenza Pandemic Preparedness Plan (PRIPP) implemented by Secretariat of the Pacific Community (SPC). The project has been designed to build the capacity of pacific island countries and territories to deal with the potential threat of another pandemic and other emerging diseases, in line with regional and international guidelines and regulations with the three broad areas of intervention: 1) Preparedness and broader emergency plans; 2) Surveillance and response by public and animal health systems; and 3) Regional coordination and project management.
59. Regional coordination and planning have also taken steps forward through the Central Asia Regional Economic Cooperation process. This has highlighted the possibilities for:
- a. testing integrated country plans and then make them operationally feasible at national and sub-national levels;
  - b. standardising management guidelines for surveillance and laboratory diagnostics;

- c. improving timeliness and reliability of influenza outbreak detection for rapid response, including through direct cross-border alert systems;
  - d. coordinating regional training initiatives;
  - e. planning stockpiles of resources; and
  - f. creating a regional technical support network and rapid response teams.
60. In consequence, the agreed Almaty Declaration on Avian Influenza and the Threat of a Human Pandemic in CAREC-countries, the Russian Federation and Turkmenistan envisaged creating a coordination technical advisory group representing the ten countries involved; creating three working groups on disease surveillance and early warning; strengthening laboratory capacity; and public communication, governance, involvement of society and the private sector; and holding a further regional conference in 2007. The published materials are obtainable at the [adb.org](http://adb.org) web-site.
  61. Such moves towards regional cooperation and collaboration in pandemic preparedness planning are important and promising. However, coordinated planning activity needs also to address challenging implementation issues. These would include the social context which could emerge with robust enforcement of non-pharmaceutical measures envisaged by some strategies of pandemic mitigation including “targeted layered containment” and pandemic mitigation. Systematic review of these issues is only now beginning.
  62. Recent analyses of European and Asian pandemic preparedness plans <sup>(16, 66)</sup> indicate that most national plans have tended not to address operational guidelines for plan implementation. These would include local level operational roles and responsibilities, logistical aspects of distribution and delivery for antivirals and other pharmaceuticals including vaccines, the maintenance of essential services, changing surveillance requirements as a pandemic unfolds, and ethical issues including alternative ways to identify, justify and reach specific “priority groups”. Relationships between central and local level pandemic planning in federal systems pose challenges both in the European area and elsewhere. <sup>(16, 46)</sup> In addition, many national plans fail to bring neighbouring regional countries within their scope despite the wide recognition of the need for partnership working.
  63. These assessments have also highlighted salient intra- and inter-regional gaps in operational preparedness. <sup>(16, 66)</sup> Generally, European and some wealthier Asia-Pacific country plans have a more operational focus, and aim strategically to deploy currently available resources to address AHI in birds and in humans. Pandemic preparedness plans of developing Asia-Pacific countries tend, with some exceptions, to have a strategic vision to strengthen future capacity but lack plans for immediate deployment. This disparity probably reflects their varied assessment of the need for prompt capacity building. On the other hand, compared to European approaches the Asia-Pacific plans more clearly and deliberately link avian influenza and the veterinary sector to human health. The case for such practical cross-sector linkages has been made on more general grounds before, for example in parts of sub-Saharan Africa in which veterinary services can be critical to zoonoses control. <sup>(86)</sup>
  64. There are opportunities for these disparate regions to learn from each other in generating pandemic preparedness plans, namely as they relate to integration of animal and human health activities through information sharing, joint investigation, public education, and systems for contact tracing. Where other regions can learn from the Asia-Pacific’s experience of overwhelming avian outbreaks and of the resource efficient regional antiviral stockpiling mechanism, they may also contribute to developing models for regional initiatives and the promotion of coherence between national plans. In addition, they may provide fora in which to explore the implications of alternative solutions for challenging policy dilemmas, for example the use of epidemiological principles to target scarce medical resources at well-defined reservoirs of infection, perhaps theoretically even “super-spreaders”<sup>(54)</sup>, rather than social or economic criteria.

### 3.4 STRATEGIC COMMUNICATION FOR AVIAN AND PANDEMIC INFLUENZA

65. Strategic communication is a systematic, planned and evidence-based approach that uses consultation and participation of communities, privileges local contexts and relies on multiple communication approaches to promote positive and measurable behaviour and social change among intended audiences. <sup>(61,98)</sup> The systematic nature of strategic communication differentiates itself from an *ad hoc* approach of producing a poster, a TV/radio spot or organising community rallies for a cause. Strategic communication helps garner political support and it motivates and mobilises community action to meet programme goals.
66. Community actions are at the heart of responses to highly pathogenic avian influenza, and preparedness for a human pandemic. For responses to be effective, people's actions should reduce the risk that animals are affected, that humans become infected, that infected humans die, or that human infection evolves into a pandemic. Such risk-reducing actions often require changes in people's habitual behaviour – changes that will only come about if they are understood and seen to be worth the effort. Hence the emphasis on mobilisation of communities through strategic communication coupled with incentives that encourage change. As a result, communication is a priority for avian and pandemic influenza programming whether it be with members of the public, or with groups who might be at particular risk (including health professionals and persons working in livestock markets).
67. Strategic communication is built on assessment of influenza-related risks to health and generally combines behaviour change and outbreak communication. Behaviour change communication focuses on ways in which individuals can reduce these risks through changed behaviour. Outbreak communication focuses on ways in which authorities responsible for animal and human health will assist in reducing the risks people face – often through taking difficult decisions that are in the best interests of communities as a whole. These two facets of communication (a) to stimulate behavioural and social change and (b) to engender trust of authorities in the event of a disease outbreak - are essential for an overarching response to the threat to communities and individuals.
68. The principles which underlie all communication strategies include the need for research into existing practices and their determinants, the knowledge that underlies them, and the emotions and incentives that might encourage desired changes. Evidence should be used as a basis for strategic planning, and communication campaigns should be monitored regularly, with their impact assessed at regular intervals.
69. Behaviour change communication is most likely to succeed if communities are actively involved in analysing their situation, identifying feasible solutions and developing the messages that will be used to encourage change. The messages should use easily understood, unambiguous language and be delivered through media that are accessed and trusted by the target audiences.
70. Outbreak communication is most likely to succeed if close attention is paid to the ways in which risks are specified, and required reactions are described. The approach to outbreak communication should reflect public demand for reliable, up-to-date information and professionals' need to motivate immediate, appropriate behaviour changes.
71. Communication campaigns: For the past year governments have been developing strategies for communication campaigns around avian and human influenza – they have largely been focused on achieving desired behavioural outcomes related to risks associated with the H5N1 highly pathogenic influenza virus. Key behaviours for avian influenza were defined in March 2006 by WHO, FAO and UNICEF officials. In summary they are: Report sick birds, Separate domestic birds from wild birds, new stock and from humans, Cook bird meat adequately, Wash hands and other exposed body parts with soap/ash after contact with birds. Governments are developing messages that reinforce these behaviours and arranging that they be transmitted to the public as efficiently, rapidly and comprehensively as possible. Additional messages are being developed to encourage behaviours appropriate for a potential pandemic situation using the principles of outbreak communication and

adapting them to a situation characterised by considerable disruption and high levels of public anxiety.

72. Implementation of national communication strategies: A UN inter-agency communication planning toolkit for Avian & Pandemic Influenza is under development and will be available on the Internet. It will cover strategy development and implementation of behaviour change communication, of outbreak communication and monitoring and evaluation - for all six WHO pandemic alert phases.
73. Ministries of Health, Agriculture and Information and Communication have a key role in devising and directing outbreak communication strategies. A technical working group has been set up by WHO to help Ministries of Health develop the capacity for communication during outbreaks and (when it happens) an influenza pandemic. WHO has published a journalist's handbook on outbreak communication and delivered training workshops. Given the key role of news media in outbreak communication, their capacity to determine the public's perception of issues, and their commitment to coherent, honest and timely reporting, close working with journalists is a core aspect of outbreak communications. UN systems agencies are therefore doing what they can to ensure responsible and reliable reporting about avian influenza and the potential influenza pandemic through journalist training workshops at regional, country and local levels.
74. Given the uneven spread of bird and human cases across the world, national authorities are at different stages in the development and implementation of communication strategies. They have been implemented rapidly in most countries in East Asia, Central Asia, and Central Europe. In other regions they tend to be at the planning stage, and officials may be reluctant to move ahead too fast. Under these circumstances materials are made ready, and procedures are agreed for their immediate release to the public in case of an outbreak. Many of the large scale mass media campaigns that have been initiated by governments on avian and human influenza have been supported from within the UN system.
75. The impact of some of these campaigns has been assessed and they have been shown to increase public awareness of avian influenza. Assessment of the Indonesian campaign has demonstrated an increased desire among the public to undertake preventive measures. In campaigns which have only been implemented for a month or two, it is premature to try to demonstrate an impact on behaviour change. However, progress on a number of key process indicators – such as ensuring that government endorsed communication plans are in place, or that messages are based on field research – has been uniformly positive.
76. Effective implementation of communication for behaviour change is time and resource intensive. It requires a judicious mix of social research, the skilful crafting of messages and careful selection and use of media. While a single burst of mass media campaigns can raise awareness substantially among people who have access to the media, it is unlikely that it will lead to sustainable changes in attitudes or in behaviours. It is, therefore, essential to combine the broad reach and visibility of the mass media with intensive inter-personal communication by community-based organisations and trusted social networks. Communication strategies for avian and human influenza are reflecting the importance of a mix of messages media while, at the same time, strengthening partnerships between governments, media organisations, non-governmental groups and private entities. Often experiences in one country can be adapted, translated and then transferred to others in the region, though the right adaptation is critical. This report analyses experiences within different regions. Illustrative country examples are given in Annex III.

#### *Asia and Pacific*

77. In East Asia, countries have moved quickly to implement strategies that focused on outbreak communications – providing reliable risk-based information to as many people as possible often in situations of considerable epidemiological urgency and uncertainty. To strengthen the capacity of national media to report on avian influenza and pandemic preparedness, a series of media-training workshops for television, radio and print journalists has also been conducted.

### *The Americas*

78. Most of the countries in the Americas region are in the process of completing or have completed national avian and human influenza communication plans. However, many politicians, officials and members of the public remain to be convinced that a human pandemic is likely. They perceive that avian influenza ranks low as a national development priority. A regional inter-agency Avian and Human Influenza Communication Task Force and Strategic Framework has been established, with the aim of mobilising and coordinating communication responses. Training in outbreak communication for journalists has been developed. Several training workshops with journalists and communicators of Ministries of Health, Agriculture and other public institution have been conducted.

### *Africa (including North Africa and sub-Saharan Africa)*

79. The governments of many African countries tend to see avian influenza as a problem that warrants little attention unless they are directly affected. This is because they are challenged by competing priorities – including food insecurity, malaria, maternal and child health and HIV/AIDS. In Western and Central Africa, the strategic approach to communication on avian and human influenza issues is to focus on prevention and control of virus transmission between animals and humans. Region-wide participatory social research is underway with the aim of yielding information for the design and development of national communication strategies. Strategies are being developed through multi-sectoral technical committees on avian and human influenza that are responsible for ensuring that suitable materials are available for different media. These include TV announcements, spots for radio shows, posters and brochures. The intensity of this work is limited by the amounts of resources available. Strategies have also included training for journalists in outbreak communication and community-based mobilisation for behaviour change (including the use of theatre to disseminate messages among hard to reach audiences). In Eastern and Southern Africa, avian influenza messages have been incorporated in the popular “Sara” multi-media programme. The priority now is to enhance capacities for monitoring and evaluation of avian influenza communication interventions, and separately those for pandemic influenza preparedness.

### *Eastern Europe and Central Asia*

80. The stages of communication planning and implementation within countries are at varying levels. In February 2006, following the outbreak of AI in Turkey in January, a major inter-regional and inter-agency workshop was organised to review and up-date the emergency preparatory framework for the region. The workshop helped to determine and prioritise roles of different agencies within the UNCT. Since then, the UN and its partners have worked closely with most countries governments to establish an inter-sectoral task force and prepare an officially endorsed communication plan. Several countries such as Azerbaijan, Georgia, Moldova, Turkey, and Turkmenistan have developed messages and materials that have been disseminated amongst key audiences including children as a result of the outbreak of AI in the region. Community-level communication activities such as use of mobile communication groups and puppets for children have been used in Armenia. And in Moldova, animation TV spots on the four key behaviours are being used to communicate the risk posed by AI to children. In Bosnia and Herzegovina for instance, a partnership has been forged with broadcasters to disseminate key preventive health messages immediately if a pandemic outbreak were to occur. Behaviour research is underway in almost all countries in the region to help update existing communication strategies and establish baseline data to measure impact of future interventions.

### *Eastern Mediterranean*

81. The perception of threat across the Middle East has varied, resulting in differing levels of country specific planning and action. While almost all countries in the region have contingency plans, only a few such as Iraq have comprehensive strategic communication plans in place. Countries including Iran, Iraq, Jordan, and Syria have initiated communication intervention such as behavioural research, media and government spokespersons’ training, and development of creative media products. In Iraq,

networks of health educators, community educators and community-based organisations have been mobilised and engaged in communication on avian and human influenza.

*The limitations of strategic communication as a stimulus for behaviour change*

82. Strategic communication only stimulates sustained behavioural and social change if accompanied by policies and regulations that work in favour of the desired change, and specific government services that are sought by those who are being asked to make the change. There is an absolute need for synergy between those responsible for developing animal and human health services and those who devise and implement communication activities. Indeed, joint programming is a pre-requisite for success. Interventions designed to change behaviour should take note of the social and economic conditions that lead people to interact with animals in ways that increase the risks they face. For instance, if farmers whose birds are culled and property is destroyed as a part of avian influenza control measures receive insufficient compensation, they will not be eager to change behaviours in ways requested by the veterinary authorities. They may resist even if the healthy behaviours are intensively promoted through multiple media.
83. The motives of government animal and human health personnel are not always trusted – particularly by members of underserved and marginalised population groups. They may not be willing to follow government officials’ advice that they change their long-practised behaviours. That is why many communication strategies have been developed through the involvement of community members - analysing the situation in which they live and identifying solutions that seem feasible from their point of view.
84. The impact of communication is even less if it is inconsistent and poorly synchronised: the results will certainly not be what were intended. There is an absolute need for personnel from different agencies working together on communications initiatives to be collaborative and coordinated, under the overall leadership of the national government.
85. Communicators are expected to be honest. Experience reveals that communication strategies which seek to generate fear and anxiety as a means to attract attention or stimulate action may lead to heightened anxiety and not result in the sustained adoption of desired behaviours. The short-term alterations in behaviour that may result from “shock and awe” are usually not sustained and the approach may lead to the initiators losing credibility as recently evidenced in Nigeria’s initial communication-led response to avian influenza.

*The major challenges for on-going strategic communication interventions*

86. Strategic communication calls for a mix of science and creativity: successful implementation of strategies calls for careful planning, adequate funding and sufficient time. The preparation time is longer if key personnel have to be trained, or if sufficient funds for long term action are not available. Under these circumstances communication efforts will be sporadic, limited in scope and not demonstrate lasting results. High quality professional capacity for strategic planning, implementation, monitoring and evaluation of communication interventions is the most valuable asset for developing effective programmes in country: successful programming depends on successful development and retention of human capacity for avian and human influenza work.
87. The highest risk communities are often those who have the lowest literacy rates and the most limited access to sources of information both mass media and interpersonal outreach. There is a particular need to develop appropriate communication materials, and identify - and mobilise - credible channels of communication to reach the most vulnerable and marginalised.
88. The importance of winning the confidence and support of poultry farmers cannot be over-emphasised to contain the spread of the virus. Where engagement with poultry farmers is not sustained, they could constitute an inhibitory group, especially where they have very strong and active networks that counter prevention and risk reduction strategies.

89. Strategies for communicating with at-risk and hard to reach communities at the start of an influenza pandemic need continued development and testing. This is an extremely high priority for those concerned with preparing societies to withstand the impact of the next influenza pandemic (see 3.5 below).

### **3.5 GLOBAL DEVELOPMENT LEARNING NETWORK**

90. There is an urgent need for international organisations and the donor community to work in close partnership with developing countries to provide just-in-time advice; share the emerging good practices coming out from countries in Asia and Europe that have experienced the first effects of the virus; and distil and draw on the lessons learned from the growing body of useful and practical experience that is informing and guiding the global response — in the hope of filling the knowledge and communications gaps. The Global Development Learning Network (GDLN) is a global partnership of more than 100 Distance Learning Centres and affiliates that utilise advanced information and communication technologies and have the skills and experience to connect people, organisations and communities working in development so that they can learn from each others' experiences, share their knowledge, and jointly develop practical solutions and initiatives to overcome development challenges in a timely and cost-effective manner. A second important objective is to form a network of practice, which could help strengthen knowledge and capacity building on Avian & Human Influenza issues around the world. The GDLN can be used to assemble key partners for a series of inter-regional knowledge-sharing seminars on AHI topics. The two seminars carried out to date brought together the UN, WHO, US' Centres for Disease Control and Prevention, UNICEF, the US Department of Health and Human Services, FAO, OIE, the World Bank, and the ASEAN Secretariat.
91. The July 2006 seminar on “The Importance of Integrated Country Programmes in the Fight Against AHI” focused on the need for close linkages between health and agriculture services to facilitate the integration of national planning. It stoked an interactive exchange of experience for senior-level ministry officials and technical experts from Vietnam, Turkey, Thailand, Nigeria, and Japan. Each country, at different stages of AHI preparedness, was able to share their national strategic plans, analytical data, and experiences with integrating country programmes. Nigeria and Turkey sought direct advice from Thailand and Vietnam, based on their own individual experiences. The exchanges revolved around issues that had not only national, but also global policy implications, including the availability, types, administration, cost, feasibility and efficacy of poultry vaccination. For African countries, the potential benefits of such information exchange are considerable. Reviewing a range of experiences and adopting approaches that have been fine-tuned by their Asian counterparts may save time and resources. The second seminar, in September 2006, on “National Communications Planning” linked Indonesia, France, Thailand, China, Vietnam, Laos PDR, Turkey, Switzerland, and health and communications experts from the US Centres for Disease Control and Prevention. Seminars for 2007 are now being planned and would include seminars on “Compensation Policies,” “Safety Measures,” “Vaccination,” “Surveillance Systems,” and “AHI Bio-safety and Bio-security,” amongst others.
92. Clearly, communications becomes a central element of the ability of the international community to prepare an adequate response to multiple threats arising from outbreaks of avian influenza and the potential human flu pandemic. The GDLN can serve to demonstrate the value of exchanging experiences, good practices, knowledge and lessons learned so far in fighting the virus. There is a strong desire expressed by developing countries in Asia, Africa and elsewhere to continue to develop these types of activities and undertake future seminars.

### **3.6 PREPARATION FOR SOCIAL AND ECONOMIC CONSEQUENCES OF THE NEXT INFLUENZA PANDEMIC**

93. This section focuses on the degree to which national governments are adopting a “One Government Response” to the threat posed by a human influenza pandemic. The response is characterised by synergy across different government ministries; between local, state and national government; and between government and civil society, private sector and media partners. The response is expected to include procedures for ensuring continuity of access to basic services, of rule of law, of financial services and of societies under the crisis conditions that pertain during an influenza pandemic. The reserve capacity of humanitarian agencies – both within and outside government – to provide large-scale relief should also be scaled up.
94. An increasing number of national pandemic contingency plans are being subject to tests – desk-top exercises, simulations and drills – so as to see whether or not they are, in practice, able to be implemented. In recent months, national authorities in the Middle East and North Africa, Europe, Central Asia, and the Americas have been particularly likely to subject their plans to these tests. This data collection exercise revealed that across all five regions 35 out of 78 national authorities had held simulation exercises in the period since June 2006. Most of these exercises have been in Asia-Pacific (6 countries), the Americas (7 countries) and Europe and Central Asia (15 countries). This continued activity should enable lessons learned from exercises to feed back into planning review processes.

#### *Inter-agency Pandemic Influenza Contingency Support Team and Network*

95. Previous public health crises such as HIV and SARS indicate that even where public health response is strong, a weak contribution from other sectors leads to more people being vulnerable, greater suffering, and increased social, economic and humanitarian consequences. The early results of pandemic preparedness exercises show that these lessons still need to be learnt and applied in many countries. The UN system will help ensure that the lessons of experience are available to national officials and institutions, to civil society, to civil-military liaison groups and to voluntary organisations – and are incorporated within the repertoire of national disaster preparedness actions.
96. To this end, a group of UN system agencies has established a multi-agency Pandemic Influenza Contingency Support (PICS) Team with a mandate of assisting countries as they minimise the social, economic governance and humanitarian consequences of the next pandemic. The team focuses on non-medical factors, and does this in advance of the pandemic in order to ensure robust multi-sectoral engagement from the start – within a context of technical leadership from the public health profession and with engagement of high-level political and managerial authority.
97. The PICS team will ensure that UN system staff are well equipped to help national authorities assess their pandemic contingency from a disaster preparedness perspective, to design, implement and test robust and high quality preparedness plans which reflect international best practice, and scale up their preparations. The team will help to ensure that the UN system is able to respond adequately to the challenges of a pandemic by improving existing regional mechanisms, and by setting them up where they currently do not exist. The Inter-agency PICS Team will be comprised of a small core group in Geneva with regional focal persons in Bangkok, Dakar, Nairobi, Johannesburg, and Cairo, later, in Central Asia, and Latin America. It will work closely with NGO, private sector and other relevant actors.
98. The next pandemic will “test notions of global solidarity”<sup>(16)</sup>. Wherever possible, countries will need to work in harmony to address and rectify gaps in pandemic preparedness plans in advance of the next pandemic. The PICS team will develop indicators of pandemic preparedness in order to make regular assessments of the state of preparedness outside the health sector country by country. It will develop best practice guidance, materials and tools to assist UN country teams and national authorities. It will encourage analysis of the kind of assistance the humanitarian system could deliver to affected populations within a pandemic, and how humanitarian actors can best prepare for this. It will build a



vibrant network of diverse actors to work together coherently, sharing knowledge and resources on pandemic preparedness.

*Financial considerations*

99. Consistently, surveys from developing countries as well as occasional developed countries have highlighted scant human and financial resources as constraints to planning efforts. Extreme disparities exist in the distribution of funds for pandemic preparedness activities, particularly in Asia and Africa and potentially in currently disease-free South America as well. Greater international commitment is required for a more equitable distribution of resources with it incumbent on wealthier countries to share scarce resources generously. Where the epicentre of the next pandemic may very well be one of the less fortunate nations or regions of the world, potential consequences of the failure to act harmoniously for the global good could be disastrous, namely that poorer countries may refuse to cooperate with the international community (sharing of surveillance data, virus strains) unless they are better supported and provided with more resources.

#### **SECTION 4: INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTATION AND COORDINATION**

100. There has, for some years, been intense international engagement in the challenges faced by countries as a result of the threats posed by the H5N1 virus and other highly pathogenic avian influenza viruses with the potential to cause a human pandemic. Since 2005 the engagement has become increasingly organised with support from development partners, including the UN system agencies, development banks, bilateral and multilateral donors, and international NGOs. The last year has seen broad agreement on the overarching strategic vision for this response as well as the elements of the strategy. A shared vision of coordinated global tracking, analysis and response to avian influenza and the threat of a human influenza pandemic took shape at the FAO, WHO, OIE and World Bank-sponsored Global Meeting on Avian Influenza and Human Pandemic Influenza in Geneva, November 2005. A supportive informal partnership – the International Partnership of Avian and Pandemic Influenza – was established as a means to bring together national governments so as to reach agreement on critical policy and programme issues. This partnership was manifest at meetings hosted by the USA and Canadian Governments in October 2005, by the Government of China, the World Bank and the European Commission at the international pledging conference in Beijing, January 2006, and at the European Commission and EU-sponsored Senior Officials’ Meeting on Avian and Human Pandemic Influenza in Vienna, June 2006. The next IPAPI-affiliated global partners’ meeting took place in Bamako in Mali on December 6<sup>th</sup>–8<sup>th</sup>, 2006.
101. The vision developed at Beijing was of harmonised tracking of the avian influenza epizootic and the threat of a pandemic influenza, with national countries devising explicit national strategies and planning integrated programmes. Stakeholders at all levels perceived the need to support national action in a consistent manner, so as to increase the likelihood that external assistance would be provided in a synergistic and effective way. In an effort to contain the spread of avian influenza, national governments have been encouraged to work closely with specialised UN agencies within the UN system, including FAO and WHO, UN funds and programmes (UNDP and UNICEF), the World Bank, OIE and other non-UN bodies, including bilateral donor agencies, international NGOs, civil society groups and the private sector. The office of the UN System Influenza Coordinator (UNSIIC) was established to promote cooperation amongst the various organisations with a view to ensuring that strategies and initiatives respond effectively and jointly to the global threat of an influenza pandemic at country, regional and global levels.
102. The World Bank established a Global Programme on Avian and Pandemic Influenza; and in January 2006 the Financing Framework for Avian and Human Influenza Action was proposed by the World Bank and approved by Partnership members within the context of the Beijing pledging conference. More than 30 countries have worked with the World Bank and UN systems’ agencies to develop their integrated national plans, to have them appraised and to seek financial resources from bilateral donors, from the newly established multi-donor financing facility and with loans from development banks.
103. Given the complexities and challenges, the different stakeholders in the response must certainly work in harmony, should demonstrate synergy and ideally function in unison. National authorities do not always find it easy to achieve this quality of coordination among stakeholders in-country, nor among those from outside providing assistance. However, inability to mount a coordinated international programme of influenza prevention, as well as pandemic preparedness and response, will lead to many avoidable deaths and to large-scale economic and social disruption.
104. The need to commit to a common responsibility for coordinated, rapid and decisive mobilisation of human and financial resources has been recognised at all levels. Within countries it has become clear, during the past year, that successful development and implementation of plans to address avian influenza and prepare for a human pandemic depends on a number of clear “success factors”. These are each considered in turn below.

105. **A strong commitment to ensuring their implementation at the highest political level, accompanied by effective leadership of all concerned stakeholders.** The International Partnership on Avian and Pandemic Influenza is designed to encourage and support sustained political commitment even when the issue of influenza is not given high prominence in the international media. The sustained political commitment is a key requirement for officials to maintain the extra effort needed to initiate preparedness for avian and pandemic influenza. In practice, the recognition by a Head of State that the issue needs attention, and the chairing of regular cross-government committees that engage the whole of Government, has been critical to ensuring progress in many of the countries where highly pathogenic avian influenza has been detected during the past year. Such commitment should be sustained even when the virus is under control.
106. **Clear procedures and systems for managing the rapid implementation of priority actions.** When avian influenza affects the birds within a country, and when human cases are suspected, a major effort is needed to scale up the response effectively which draws on human capacity in country, systems for surveillance and response, confirmation procedures, and the engagement – at all levels – in a common protocol with an acceptance of responsibility for the provision of a predictable service by the different professional groups concerned – be they in the animal health, public health or crisis response services. For this to work – for the scale up to be effective – capacities and systems have to be in place and to have been put to the test, and financial (and human) resources must be available to ensure that the systems are able to function as expected.
107. **Primary attention to improved functioning of veterinary and human health services at all levels, with a transparent approach to the sharing and dissemination of information about suspected disease outbreaks, immediate efforts to establish their cause, and prompt responses (including restriction of movement of animals that are at risk).** The animal and human health services need to have been established and to have benefited from sufficient investment for them to be capable of scaling up. They also need to be capable of responding to data that is generated from field settings, and to be able to analyse and make sense of the data in ways that provide information suitable for management decisions. If data are not made available in a timely fashion, the information on which decisions are made will be incomplete. If the data are not correctly analysed in an experienced and multidisciplinary fashion, the information will be of poor quality. And if the personnel in animal or human health services are insufficiently experienced to interpret the information made available, the responses to the information may not be appropriate. If the systems and institutions through which these responses are implemented are inadequately staffed and managed, the capacity to implement the response will be insufficient: this capacity is particularly required when activities like restrictions on the movement and marketing of birds or their culling, and restrictions on the movement of humans, are being considered. An inadequate or poorly communicated response can lead to an exacerbation of the problem (e.g. persons selling birds secretly to avoid having to have them culled).
108. **Incentive and/or compensation schemes combined with effective communication to communities on the importance of immediately reporting disease outbreaks in animals to responsible authorities.** Incentive schemes for the reporting of suspected disease outbreaks are critical. So is the absence of any disincentive (such as punishment of those who report suspected outbreaks, whether among animals or humans). Punishment is more likely if there is no compensation for birds that are culled or property that is damaged as part of control measures: an analysis of alternative approaches to compensation follows in section 5.
109. **Effective mobilisation of civil society and the private sector as well as all levels of government.** Voluntary sector and private sector groups are key to the response to avian influenza and the next pandemic. Animal diseases are a threat to human health and undermine human security. As we have seen from HIV/AIDS, governments alone cannot tackle the problems posed by infectious disease pandemics. What is needed is a movement of government, voluntary bodies, private sector groups and the media working together to a common agenda, in harmony and, ideally, in synergy. This calls for an inclusive approach to bringing different groups into the response, agreement on protocols for joint working and an approach which is best characterised as a managed movement – managed because there must be clarity on who will do what, when and where; a movement because it is people

working together with their own collective momentum. Within governments such movements have to be made effective within local, regional and central government, and this is challenging within federal governance systems.

110. **National mass communication campaigns that promote healthy behaviour and focus on reducing the extent to which humans might be exposed to HPAI viruses.** As was shown in section 3.4, communication is key to social mobilisation, to successful behaviour change, and to taking forward effective programmes at different levels both locally, nationally and internationally. Well-designed and implemented communications campaigns are critical for successful action.

#### *Coordination*

111. Successful coordination of external assistance is essential if the international community is to nurture the six political and institutional success factors described above. The coordination is necessary to permit agreement on (a) the kinds of external assistance required and (b) the manner in which they are to be made available. At country level, the important leadership role of national authorities, supported by the UN Resident Coordinator, the World Bank country director, and the in-country representatives of specialised international agencies, has been recognised as a primary mechanism for developing and implementing national plans while securing necessary financial support. In country, coordination of external efforts has mainly revolved around the Office of the Resident Coordinator and UN country team and the World Bank country Director, with a strong role for technical guidance resting with WHO and FAO. Hence, much emphasis has been given to these different coordinating roles so as to ensure common strategies and joint action within the government, and between the government and the UN system agencies, World Bank and other development banks, donor agencies, private entities, non-governmental groups, humanitarian agencies and professional bodies.
112. Given varying patterns of country need and differences in institutional, political, programmatic and resource-linked local circumstances, countries have been moving forward at different speeds. These local factors are primary determinants of progress. The effectiveness of coordination, reflected in harmonised, synergised and joined-up implementation of efforts, should have a substantial impact on ways in which national and international actions influence the success of the response.
113. In order to assess the coordination of AHI related activities, a collaborative study is in hand by the UN, the World Bank and GTZ to analyse factors influencing efficient coordination at country level. The study is intended to (a) increase the quality of coordination within governments, and (b) strengthen partnerships and alliances among all stakeholders, including government, civil society groups, the international community, bilateral and multilateral donors, and the private sector. The study is currently assessing coordination mechanisms, structures and processes in a number of countries showing varied levels of preparedness and faced with varying levels of threat. The study report will propose terms of engagement for effective and efficient coordination.
114. The data on AHI coordination gathered in October-November 2006 indicate that 81% (61/75) of national authorities convene regular meetings attended by all stakeholders in order to improve harmonised and aligned interventions and to prevent duplication of effort; but 19% do not do this. Thus, although substantial efforts have been made to ensure effective coordination at the national level, there is still scope to enhance this element of the response.

## **CONCLUSIONS**

115. This overview points to the following general conclusions:
  - There has been significant progress with many elements of planning, but this could deliver further gains through higher levels of official endorsement; more simulation exercises at national and local levels; and sustained engagement in implementation issues.

- Priorities in animal health are likely to be building rapid, sensitive and reliable detection capacity; enhancing bio-security; ensuring performance of surveillance systems meet OIE reference standards; ensuring that where poultry vaccination programmes are effectively monitored for impact on outbreak incidence and for their wider virological implications; sustained extension of veterinary and village veterinary HPAI training programmes.
- Priorities related to human health and across related sectors are likely to be building and sustaining rapid and effective diagnostic capacity and influenza laboratory networks; encouraging the issue of clinical guidance; needs for advice and guidance on non-pharmaceutical and non-health related measures for pandemic containment and mitigation.

## SECTION 5: PRIORITIES FOR INTERNATIONAL ACTION

116. The June 2006 report on *Responses to Avian and Human Influenza Threats: Progress, Analysis and Recommendations* identified existing gaps as well as priority actions needed to remedy the situation. Emphasis for immediate action and attention was placed on the following six broad areas related to AHI preparedness and response:
- a. support for better prevention and control programmes highlighting strengthening of surveillance, detection and early reporting, bio-security, strategic vaccination with good quality controlled vaccines, investment in veterinary diagnostic laboratory capacity, better practices in animal health including farms and in market place activities;
  - b. protection of human health through rapid response mechanisms, pandemic containment, investment in human diagnostic laboratory capacity, sharing information and ensuring access to vaccines and antivirals;
  - c. innovative development efforts in vaccine and diagnostics fields with emphasis on full sharing biological materials and sequences with systematic international action in epidemiology, virology, the social sciences and among governments, researchers and manufacturers;
  - d. support for behaviour changes which reduce risks to health, livelihoods, livestock and economies through local and international efforts in consistent information, education and communication campaigns;
  - e. mitigation of socio-economic impacts, particularly on poultry-keeper livelihoods, of avian influenza through development of fair and equitable incentive structures and compensation mechanisms; and
  - f. reinforcement of a flexible financing framework by the international community for timely and predictable external assistance, improvements to fund distribution systems, training and deployment of veterinary and human epidemiologists and health workers as well as preparation of plans and priority identification by countries requesting aid.
117. The prevention and control of trans-boundary diseases needs a long-term and sustainable strengthening of the veterinary services and analysis of poultry sector restructuring options. This should include better prevention and control programmes highlighting strengthening of surveillance, detection and early reporting, bio-security, strategic vaccination with good quality controlled vaccines, investment in veterinary diagnostic laboratory capacity, better practices in animal health including farms and in market place activities. The joint initiative by FAO, OIE and WHO to form a Global Early Warning and Response System (GLEWS) for trans-boundary animal diseases including zoonoses aims to meet the need for a transparent and effective international system bridging animal and human health risks. In order to take into account the evolution of the epidemiological situation and update on new scientific information, FAO and OIE are currently revising their Global Strategy for Prevention and Control of H5N1 Highly Pathogenic Avian Influenza.

### 5.1 CONTROLLING HPAI: USE OF VACCINES IN CONTROL STRATEGIES

*Innovative international efforts to develop vaccines involving governments, researchers and manufacturers.*

118. There has always been debate over the merits of poultry vaccination to prevent transmission of H5N1 avian influenza but the results of vaccination campaigns in some regions and countries such as Vietnam or many parts of China shows that vaccination is a good tool if used appropriately. Modelling studies suggest that where 90% of birds in a flock are adequately protected by vaccine, the probability of flock infection is reduced by 50%<sup>(82)</sup>. However, despite such vaccination protection at the individual level, 'silent spread' of H5N1 may still occur within a flock with insufficient herd immunity, with risk of between flock transmission, particularly at the end of production cycle when biological security is compromised during bird transport and cleaning of housing units.<sup>(82)</sup> This highlights the need for a highly effective vaccine programmes including effective vaccination delivery

and monitoring mechanisms, the use of quality controlled vaccines, adequate bio-security measures, permanent increased surveillance of a possible virus circulation and systematic verification of the genetic and immunological characteristics of any new isolated strain and the implementation of a DIVA strategy potentially by the use of unvaccinated sentinel birds placed within vaccinated flocks. In addition, vaccine developments, such as the use of reverse genetics to engineer chimeric viruses for bivalent protection against influenza and Newcastle disease virus<sup>(36, 74, 104)</sup> show significant potential.

119. While it is clear that changes have occurred in the virus<sup>(15, 68, 69, 87)</sup>, there is debate about their public health significance. The significance has been questioned in relation to poultry vaccination in China<sup>(109)</sup>. Robust surveillance coupled with implementation of effective control measures continue to remain of paramount importance. During the 2002 and 2003 outbreaks in Hong Kong, farmer-administered universal vaccination with an H5N2-derived vaccine coupled with enhanced monitoring and surveillance as well as bio-security was successful in reducing viral excretion and protecting local farms and poultry markets from infection.<sup>(23,36)</sup>
120. Domestic waterfowl may persist as vectors, and may be a reservoir of H5N1, therefore able to act as silent transmitters of disease<sup>(109)</sup>. A reverse genetic-derived vaccine with high efficaciousness in ducks shows promise for future use in influenza control in this species.<sup>(108)</sup>
121. The OIE has tracked vaccine developments. In response to requests from countries to guide them through implementation of vaccination programmes against AI, FAO and an OIE *ad hoc* group are in the process of drafting guidelines which address necessary elements for the application, monitoring and precautionary measures of vaccination strategies. For various reasons, vaccination alone cannot reduce risk of primary AI introduction; however, it is being investigated as a complementary measure in AI control to supplement controlled elimination of infected poultry, stamping out, movement restrictions, improved bio-security and hygiene and appropriate surveillance.
122. At present, OIE and FAO recommend eradication of HPAI at its source in poultry with early outbreak detection with rapid response as the first line of defence. Vaccination decreases viral load in susceptible avian species and in the environment. Vaccination also increases flock resistance to infection with consequent decreases in mortality, economic and production losses, risk of human exposure to and cases of zoonotic AI viruses. Ideally, appropriate bio-security measures are in place for prevention of primary introductions of AI and secondary transmission is eliminated through depopulation practices, strict hygienic measures, movement restrictions and transport bans. In addition, other and less well investigated environmental factors<sup>(7)</sup> (such as host nutrition) may influence viral virulence and evolution in ways which could merit further work on innovative approaches to disease control, particularly in regions known to present significant variation in soil minerals and micro-nutrients.
123. The OIE *ad hoc* group in collaboration with FAO is currently preparing guideline checklists for countries considering implementation of vaccination strategies. Two checklists are being developed: one for identification of risk factors and another which details the important issues to consider once a vaccination programme will be implemented. These guidelines are complementary to the principles outlined in the FAO Recommendations on the Prevention, Control and Eradication of Highly Pathogenic Avian Influenza in Asia (September 2004). An OIE FAO International Conference on vaccination will be held in Padua, Italy in March 2007, after which it is anticipated that a revised FAO OIE revised strategy will be issued.
124. In determining a country's risk factors, several points needing consideration are listed below.
  - Preventive vaccination in an area not yet contaminated should be based on risk analysis, using information from existing surveillance programmes and the prevailing epidemiological situation, including risks of infection through wild birds and live markets and where infection has occurred in poultry flocks.

- An assessment of bio-security levels, poultry production systems, farming practices, poultry species reared, farm density and trading patterns will assist in determining the usefulness of vaccination as a preventive measure on farms not already infected.
  - Potential for the protection of social factors such as livelihoods.
  - Financial factors such as compensation mechanisms and costs involved in adopting or not adopting vaccination strategies.
  - The importance of early warning of outbreaks and the ability to mount quick responses, assisted by a high level of public awareness and sufficient diagnostic capacity for HPAI.
  - Potential impact on trade of vaccination implementation. The new OIE *Terrestrial Code* chapter on AI recommends continuation of trade in the presence of vaccination, provided the exporting country is able to produce surveillance and other data which confirm the freedom from AI in the exporting flock of origin.
125. Based on the risk assessment, vaccination may be recommended to reduce the risk of primary introductions in instances where illegal trade cannot be controlled, bio-security levels are insufficient, other socio-economic factors, such as live bird markets or fighting cocks are present, or in the face of similar risk factors. Vaccination is also a suitable strategy to reduce horizontal spread of HPAI between poultry flocks and other birds. Used as an additional tool to control an epidemic of HPAI, it is a viable complement where culling capacity is insufficient, where compensation mechanisms are not in place, or where bio-security is inadequate.
126. Once the decision has been made to adopt a vaccination strategy, the OIE's *ad hoc* group on vaccination guidelines has made the following recommendations:
- quality assurance of vaccines which must be produced in accordance with OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*, with evidence that the vaccine significantly reduces virus excretion from vaccinated birds which are subsequently infected;
  - specific vaccine strain used in the vaccine must be identified and approved;
  - well defined plan and strategy for vaccination roll-out which incorporates surveillance for field virus as well as for antigenic drift;
  - legal framework identified in advance of any vaccination implementation;
  - exit strategy or a mechanism for additional disease control measures to control infections once vaccination is terminated;
127. Where vaccination is implemented, the use of DIVA strategies or Discrimination between Infected and Vaccinated Animals (or birds and flocks) is fundamental for progressive disease control and eventual eradication. Generally, the three types of campaigns for AI vaccination in target species are 1) emergency vaccination in the face of an epidemic to reduce massive rapid spread of infection; 2) preventive vaccination where there is a high risk of infection and early detection/ rapid response measures are insufficient; and 3) routine vaccination in endemic areas. The most common vaccination strategies are mass vaccination for all susceptible birds, targeted vaccination for defined categories of birds, and ring vaccination for a defined area around an outbreak.
128. The European Commission recently published a discussion paper on the use of DIVA strategy vaccination for H5N1 HPAI which was largely supportive of vaccination as an adjunct to other control measures and incorporated all the items in the OIE checklists<sup>(27)</sup>. The EC has already approved influenza vaccination plans from the Netherlands, France, Italy and Germany for both prevention and emergency response. It is not yet possible to assess the effectiveness of vaccination as HPAI H5N1 has not occurred in any of the regions where vaccination has been practised. There is, however, sufficient evidence that vaccines used in the EU would provide significant protection against this virus.



## *Diagnostics*

129. A recent FAO investigation of reporting times for outbreaks of AI in animals to the OIE, the official global agency for mandatory reporting of HPAI, included 2298 disease outbreak events in both domestic and wild birds from 31 countries since 2003. Average time from outbreak observation to reporting to the international agency was 12.7 days with a median of 10.8 days (range: 1.2 – 44.5 days). The required reporting interval from observation of outbreak to notification of the OIE is immediate or 24 hours. This disparity represents a significant gap in notification time and translates into prolonged interval to response by international agencies where required. It also highlights the usefulness of reporting times as a marker variable in assessing country level preparedness. A priority for future action is to decrease reporting times to the OIE to within the optimal expectations.
130. The most recent OIE Terrestrial Manual update in May 2005 identifies current recommendations for identification of the influenza A. Four broad types of laboratory test are allowed with the gold standard being virus isolation and characterisation of haemagglutination (HA) and neuraminidase (NA) subtypes. This is similar to the method recommended for definitive antigenic subtyping of influenza A viruses by the World Health Organisation (WHO) Expert Committee.<sup>(83,111)</sup> Alternatively, agar gel immunodiffusion (AGID) to detect antibodies to the nucleocapsid and matrix antigens and confirm influenza A presence is also acceptable for OIE reporting requirements. More recently accepted tests for HPAI include an enzyme-linked immunosorbent assay (ELISA) for demonstration of influenza A nucleoprotein and reverse-transcription polymerase chain reaction (RT-PCR) using nucleoprotein-specific or matrix-specific conserved primers which have replaced isolation in embryos.
131. Serological tests recognised by the OIE to assess exposure to AI virus include Agar Gel Immunodiffusion (AGID), haemagglutination (HA) and haemagglutination inhibition, as well as neuraminidase-inhibition tests. This latter procedure requires specialised expertise and reagents and testing is reserved for OIE and FAO Reference Laboratories. The DIVA strategy relies on using a serological test to detect specific anti-N antibodies. ELISA tests (Enzyme-linked immunosorbent assays) have been used to detect antibodies to influenza A type-specific antigens.
132. Newer methods for AI diagnosis are broadly based on antigen detection and direct RNA detection. Commercial kits for antigen which detect the presence of any influenza A viruses in poultry<sup>(90)</sup> allow for 15-minute diagnosis. Several different test and antigen preparation methods are available or in process. Recent developments have allowed for direct “flock-side” detection and characterisation of AI virus from clinical field specimens with the application of molecular techniques. RT-PCR techniques allow rapid identification, subtype detection and virulence marker characterisation. Direct RT-PCR tests are best suited to rapid identification of subsequent outbreaks following detection of the primary infected premises and virus characterisation.

## **5.2 SUSTAINING LIVELIHOODS AND IMPLEMENTING COMPENSATION**

133. There has been increasing recognition of the need for a compensation strategy to be included in each country’s preparedness plans for HPAI control. Affected and at-risk countries in the developing world have requested advice from the international community in outlining and, in some cases, funding and implementing compensation processes. Table 9 indicates the main features of existing “compensation” schemes in countries represented by the October-November information-gathering exercise. Upon request, advice has been provided to individual countries through country missions and at regional workshops, by FAO and the World Bank. In addition, a multi-agency collaborative task force (World Bank, FAO, IFPRI, OIE) has reviewed good practices in compensation for disease control and produced a report<sup>(110)</sup> for the Senior Officials meeting in Bamako which draws from the following data sources:

- Country mission reports;

- Electronic Consultation in September 2006, facilitated by the FAO ECTAD Socio-Economics working group;
- Extensive review of published and informal literature including World Bank project documents and FAO mission reports;
- Country case studies in Vietnam, Indonesia and Egypt.

134. The Electronic Consultation was initiated to discuss and clarify issues and identify possible solutions for compensation. The aims of the consultation were to share experiences, develop advice on designing and running effective and efficient compensation strategies and understand limitations of various strategies in relation to HPAI control. The consultation covered three topic areas, namely, 1) purpose and effectiveness of compensation; 2) practicalities of effective and efficient compensation and 3) management of compensation funding. Responses were solicited from more than 100 participants, including: FAO field staff and consultants directly involved in assisting governments in designing HPAI control and prevention programmes (37%), government staff, including some CVOs, dealing with HPAI planning (20%), NGOs, other international agencies and donors, academics and experts. Thirty-four percent of participants were based in Africa, 23 percent in Asia, 28 percent had more global responsibilities. The rest were based mainly in Latin America and the Caribbean, Europe, and all other regions.
135. The multi-agency task force identified several critical issues for designing effective compensation schemes. The salient items are identified here and described in greater detail in the report.

#### *General compensation practices*

136. The international community and national governments have recognised the nature of combating HPAI as a Global Public Good in initiating funding mechanisms to enable compensation for assistance in strategies to control the disease at source.
137. The objectives of compensation schemes are two-fold and complementary. The first is to enhance producer cooperation with disease reporting and culling requirements, thereby increasing the effectiveness of disease control while minimising overall costs and impacts on livelihoods. The second is to reimburse losses of private citizens who have complied with a disease control process for the public good.
138. While the imperative of disease containment drives compensation schemes, the reality of the severe impact of culling measures on very poor people cannot be ignored. However, it is impossible for a compensation scheme to reimburse all livelihood losses caused by livestock disease control. In addition, compensation schemes cannot replace social safety nets; other measures are required to complement compensation.
139. Effective and efficient compensation schemes reimburse appropriate beneficiaries for appropriate losses at levels which provide necessary incentive for producer compliance with reporting and culling measures. Payment of compensation must also be timely, specifically, within a short interval after culling. This is only possible where expedient and transparent payment schemes are in place and there is widespread awareness and capacity to disburse payments.
140. As the disease becomes endemic and adjustments made to disease control strategies and production systems, compensation practices are likely to need to change over time. The aspect of flexibility is important for successful implementation.
141. Existing legislation is often inadequate for rapid implementation of effective schemes. When a compensation plan is designed during an outbreak, emergency measures may be employed using any available systems and instruments. However, the aim should be to create a sustainable legislative and financial structure appropriate for improved HPAI control as well as for other new and emerging livestock diseases of global significance.

### *Beneficiaries*

142. As a general rule, beneficiaries of compensation are the owners of the animals. Other supply chain participants who have not historically benefited from compensation schemes include feed suppliers and market operators, who may also incur losses when livestock production and sales are disrupted by disease.
143. The type of production system significantly shapes feasible identification procedures. Large, highly bio-secure poultry farms (sectors 1 and 2 under FAO nomenclature) generally have good inventory records and culling is well-controlled. Farmer documents are then a basis for compensation. Special consideration must be given to systems which include contract farmers.
144. Identification of the beneficiaries for small enterprises and back yard systems (sectors 3 and 4 under FAO nomenclature) is more complex, as records are not normally available and other factors, such as differential ownership by gender, become important. Surveys as part of preparedness planning before outbreaks of disease rather than afterwards, including the identification of ownership patterns, broad awareness of the existence of compensation and payment as an integral part of the stamping out process, are key factors to ensure broad participation and buy-in of the sectors 3 and 4.

### *Type of losses to be compensated*

145. Normally, compensation covers only direct losses. This includes the value of the animals and, in wealthier countries, costs related to disposal of culled animals. Farm-level losses due to business interruption, movement control and market failures are generally not compensated, although in developed countries, private insurance policies cover such losses. The loss of animals which die of the disease before culling is not normally compensated. However, in view of health risks posed by trade and consumption of infected dead poultry, compensation is justifiable in most cases where payment is linked to reporting of suspect cases.

### *Setting compensation rates*

146. Compensation rates are identified on the basis of (a) market value; (b) budget availability; and (c) production costs. Wherever possible, market value should be used as the basis for setting compensation policy. Compensation rates should be set before the disease emerges, as part of an overall preparedness plan. Uniformity of rates across the country by major bird type improves implementation efficiency of the programme, and should be pursued in situations with good movement control. In situations of poor movement control, differentiation by age and/or weight of the bird may be required to fit compensation as close as possible to prevailing market prices. In all cases, the number of different types of birds should be kept as small as possible (broiler, layer, duck, etc.). To provide positive incentives for early reporting, compensation rates should be between 75 and 100 percent of market value for suspected birds, considerably lower for diseased birds and less for dead birds. Special rules may be needed for very high value stock, such as fighting cocks or pet song birds. Table 9 indicates the distribution of rates in countries represented by the October-November information-gathering exercise.

### *Movement controls during culling*

147. Bird movements need to be monitored during culling where compensation exists to ensure there is no incentive for the influx of healthy birds. Similarly, movement control is a critical element in preventing sick animals from escaping culling. In particular, for the traditional systems (sectors 3 & 4), it is very difficult to fine tune compensation levels to the extent that it will induce all categories of animals to be presented.

### *Establishing awareness*

148. Experience from on-going campaigns highlights the absolute necessity of communication about compensation. Communications campaign costs may exceed 10 percent of the budgeted compensation package for HPAI. Communications should include direct consultations with beneficiaries, advocacy, and information using multiple media and channels. Messages should be prepared by technical experts and communication specialists and be consistent over time as frequent policy and message changes undermine the campaign credibility.

### *Payment systems*

149. To promote early notification of suspected outbreaks, compensation for culled birds must be paid as soon as possible. Ideally, this payment should occur within 24 hours of culling as any delay will be likely negatively to affect reporting.
150. The system should be simple enough to be used in difficult field situations and capitalise on existing institutions (e.g. line ministries, veterinary services, financial institutions).
151. Eligibility databases and emergency payment procedures should be prepared as part of the emergency preparedness plans. However, where the disease emerges prior to establishment of databases and payment procedures, mechanisms for fiduciary assurance need to rely less on pre-identified control policies and more on post-crisis independent scrutiny, such as audits, in order to avoid inordinate delays in compensation disbursement. During outbreaks, database building compensation payment may need to occur in parallel.
152. Veterinary services (assessing the need for and reliability of culling), MOF (payment oversight), civil authorities (security), and community leadership (transparency) should be working in cooperation and be directly involved in the payment process.
153. For farming sectors 1 and 2, bank transfers are the most adequate instrument, whereas cash payments are the preferred method for sectors 3 and 4, many of whom are without banking access. Vouchers are less credible for immediate motivation of rural households, whereas they have a greater role in industry restructuring.
154. Maximum use should be made of local banking entities, producer's organisations, veterinary services, non-governmental organisations and other aid agencies. The fiduciary assessment of these organisations should be part of the preparedness planning.
155. Immediate follow-up work will be necessary to refine further recommendations from the review report on compensation. An inter-agency effort is planned, which involves the same agencies which contributed to the report, to address in particular:
- institutional settings in which compensation takes place;
  - arrangements for contingency funding;
  - development of cost sharing mechanisms;
  - extent to which compensation reaches smallholder producers; and
  - experiences on monitoring and evaluation.
156. Outstanding concerns persist in relation to livelihoods disruptions and AI control measures, which compensation schemes cannot address. A UN Knowledge Network on Avian Influenza Socio-Economics has been established which is currently hosted by FAO and with participation from a range of international agencies. Strong efforts are underway to expand participation to a wider constituent group including the NGO community. The primary aim of the network is to improve knowledge sharing and collaboration in rehabilitation of the poultry sector. Key concerns which the network will address include:

- Socio-economic aspects in defining the appropriate balance between different elements of a disease control strategy (culling, compensation, vaccination and other measures) as the disease become more endemic.
- Market access for smallholders, particularly in sector 3, in the face of increasing bio-security regulations and attempts to restructure the sector. Initial studies suggest that tougher bio-security regulations in the interests of human and animal health reduce access to markets for smallholder producers.
- The extent to which AI disease, or its control, may have an impact on national or household food security. Initial assessments suggest that at the national level HPAI outbreaks would very rarely cause a direct food security problem, but at local level they may pose a problem for the most vulnerable households and cause indirect food insecurity effects through impacts on livelihoods.
- The potential for safer but still cost effective production in sectors 3 and 4. Investment and recurrent costs in sector 4 are generally very low, and recommendations on bio-security must take into account limited ability of individual producers to invest. This does not exclude the possibility to develop safer poultry production in sector 4, but it does require innovative thinking, for example the development of community-level approaches to bio-security.

### 5.3 HUMAN HEALTH: VACCINES AND DIAGNOSTICS

157. At the Influenza Research at the Human and Animal Interface working group meeting recently convened at WHO, <sup>(117)</sup> several priority recommendations were made with the goal of protecting human health. Verbatim, they are:

- Make the development of a simple, robust, and reliable diagnostic test for use in the field and at the patient's bedside a high priority. Facilitate industry's development of such a test by providing representative panels of viruses and addressing relevant issues of intellectual property rights.
- Publish recommended diagnostic tests and methods for their accurate performance, including an alert to common pitfalls, on the WHO web site, and develop a schedule and system for regularly updating tests and kits with appropriate reagents.
- Investigate the sensitivity with which currently available diagnostic tests are capable of detecting mild or asymptomatic infections.
- Establish benchmarks for evaluating the effectiveness of candidate pandemic vaccines.
- Integrate data on antibody responses in persons participating in the various clinical trials of candidate pandemic vaccines.
- Determine which (if any) animal model provides the best information on cross-clade protection among H5N1 variants.
- Continue to monitor H5N1 virus strains, in humans and avian species, to determine changing patterns of resistance to antiviral drugs.
- Investigate factors that may make children and young adults especially vulnerable to infection.
- Conduct studies to determine whether a genetic predisposition increases the likelihood of human infection or of human-to-human transmission among genetically-related persons.
- Address and resolve the ethical issues that arise when DNA banks are established using specimens from deceased patients, family members, close contacts, and controls.
- Develop a single, agreed upon system of nomenclature to describe different phylogenetic, genetic, and antigenic groups of H5N1 viruses globally.

#### *Full sharing of data and biological materials*

158. Recent moves by G8 countries have sought to encourage extension of the scope for access to biological materials and related epidemiological and virological data. <sup>(76,81)</sup> The Government of Indonesia and the USA's Centres for Disease Control and Prevention have expressed their willingness

to share all influenza genomic data. In addition, there have been recent moves to promote a global influenza laboratory to support rapid genotyping and epidemiological analysis likely to assist virus strain monitoring for vaccine development and pandemic early warning.<sup>(52)</sup> The relationship between this novel proposed international laboratory initiative and the FAO/OIE's existing OFFLU laboratory network remains to be clarified. As noted above, the WHO Influenza Pandemic Task Force has endorsed the WHO proposals for best practices in sharing of influenza viruses/specimens and genetic sequences, and recommended that after further refinement they be put before the WHO Member States for further consideration.

*Innovative international efforts to develop vaccines involving governments, researchers and manufacturers*

159. Influenza H5N1 vaccine development work has resulted in recent clinical and pre-clinical trials of a range of formulations. These include: inactivated split or sub-virion non-adjuvanted vaccines;<sup>(12, 96)</sup> inactivated whole-virion cold-adapted adjuvanted vaccine;<sup>(53)</sup> live attenuated whole-virus vaccine;<sup>(92)</sup> purified recombinant HA protein vaccines;<sup>(95,97, 107)</sup> and (for the H3N2 virus) a novel DNA vaccine delivered epidermally.<sup>(22)</sup>
160. In addition, vaccine manufacturers have been actively engaged in development of DNA vaccine technology,<sup>(76)</sup> and of baculovirus expression systems for purified recombinant HA vaccine production;<sup>(79)</sup> expansion of cell culture vaccine production systems;<sup>(63,70)</sup> and the development and testing of novel antigen-sparing adjuvants.<sup>(41)</sup>
161. These developments have received some substantial public sector financial support (e.g. within the USA<sup>(20)</sup>) and regulatory assistance with rapid market authorisation procedures (e.g. within the EU<sup>(28, 81)</sup>). However major challenges to rapid development, testing, production and global distribution remain. Production capacity is largely confined to nine industrialised countries. Even if existing capacity were diverted wholly to manufacture of a monovalent pandemic vaccine, the resulting supply would be likely to fall short of expected global demand by several billion doses given that the majority of national authorities would appear to envisage purchasing it.
162. In this context, the WHO has proposed activities for delivering progress in the short (< 5 years), medium (5-10 years), and long term (> 10 years). The Global pandemic influenza action plan to increase vaccine supply sets out three strategic objectives:
  - to develop immunisation policy to increase demand for seasonal vaccines (minimum estimated investment required US\$300 million);
  - to increase influenza vaccine production capacity; this envisages support from a collaborative consortium of laboratories to develop better candidate prototype vaccine strains, coordinated funding for clinical trials to accelerate systematic and comparative evaluation of formulations other than those commonly used for seasonal vaccination, and innovative approaches to vaccine production and delivery (minimum estimated investment required US\$2-9 billion);
  - to promote research and development of new influenza vaccines, including through novel adjuvants, more immunogenic vaccines, predictive modelling of viral evolution, development of formulations which induce a broad-spectrum and long-lasting immune response, and improved evaluation of vaccine performance in accord with guidance and standards to be developed by the WHO, national control laboratories and regulatory agencies (minimum estimated investment over an extended period of several hundreds of millions of US\$).
163. Implementation of this plan would in total require governments to commit approximately US\$3-10 billion; and it is envisaged that an international task force overseeing this would include representatives of national authorities, industry and the research community.
164. National authorities are also likely to face an explicit choice between alternative vaccine strategies which are likely to require different quantities of antigen.<sup>(12)</sup> The alternatives are (i) vaccination to induce an optimal immune response to protect the individual from infection; and (ii) vaccination to

protect the population by immunising the maximum number of people required to prevent their mortality or severe disease. There are established serological criteria for determining the level of individual protection achieved, but not currently for the second possible objective. The strategic challenge for each national authority will lie in striking an acceptable balance between the individual and population

165. The likelihood that many countries will face shortfalls in supply of vaccines and antivirals has led some commentators to argue for the preventative and therapeutic use of statins. These widely available medicaments may modulate elements of the immune response elicited by a range of respiratory diseases, <sup>(48,60,100)</sup> including human cases of H5N1 infection. <sup>(19)</sup> However, there is no direct evidence right now that statins would be beneficial, and much further work is needed on this option. There is the possibility that statins or other immunomodulator therapy, when used alone without antiviral therapy, could do harm.

#### *Diagnostics*

166. The desire to have the capacity to diagnose H5N1 more quickly and easily in more settings has promoted work on rapid diagnostic tests for influenza A/H5N1. The “gold standard” of diagnosis by viral isolation is relatively slow. PCR can provide results much more quickly. But both techniques are not easily or widely available in many countries. RT-PCR has failed to detect cases of human H5N1 illness, particularly with upper respiratory samples, and commercially available antigen tests have shown poor sensitivity to date.
167. Recent work on laboratory-based molecular diagnostics has indicated promising lines of work, <sup>(49,75)</sup> including for tests of oseltamivir resistance. <sup>(18)</sup> More sophisticated laboratory methods are emerging which may also shorten times to diagnostic confirmation. <sup>(59)</sup> However, rapid influenza tests for field use cannot identify specific subtypes of influenza (e.g., H5 or H3 or H1 viruses) and available tests often miss true positives (not sensitive). Recently reported experience in both Indonesia and Turkey (clade 2 infections) confirms earlier reports from Vietnam and Thailand (clade 1 infections) of the low sensitivity of rapid antigen tests. However, the availability of inexpensive subtype specific tests that are sensitive (and specific) under field conditions should assist both epidemiological surveillance and clinical care of patients.

#### *Surveillance*

168. The need for effective global AI virus surveillance has long been clear. The case for tracking virus genetic evolution and diversity is compelling for reasons of rapid vaccine development and the potentially early warning of an emergent pandemic. <sup>(47,81)</sup> Current passive and active avian surveillance systems provide information derived from official sources (OIE, WHO), news reports, field reports from FAO staff, official government sources, reference laboratories and others, for example through FAO’s EMPRES mechanism. The joint initiative by FAO, OIE and WHO to form a Global Early Warning and Response System (GLEWS) for trans-boundary animal diseases including zoonoses aims to meet the need for a transparent and effective international system bridging animal and human health risks.
169. A recent overview of surveillance activity <sup>(117)</sup> indicates that European systems (which include confirmatory testing) extend some elements of coverage to parts of Africa and Asia. In China there is coverage of around 4 billion birds, including live bird markets. Japan has a long-standing sero-surveillance system, and has been working to improve diagnostic capabilities across the region. Kazakhstan has maintained a surveillance system, mainly for wild birds, since 1979. Since 2004, Thailand, Cambodia and Vietnam have established surveillance programmes although their extent and findings have not yet been made public. Also since 2004 new surveillance work has been undertaken in Lao. <sup>(9)</sup> There is a strong case for ensuring that surveillance cover various animal species, including cats and pigs, given the risk that co-circulating virus types might reassort and form novel potentially pandemic strains. <sup>(68, 117)</sup>

170. In Africa, surveillance is relatively fragmented between countries although there is significant network activity linking influenza laboratories in 15 countries (Senegal, South Africa, Madagascar, Kenya, Central African Republic, Cameroon, Nigeria, Gabon, Cote d'Ivoire, Ethiopia, Ghana, Uganda, Zambia and Algeria). Effective surveillance and cross-sectoral working are central to recent planning by the Regional Economic Communities in Africa, including SADC, ECOWAS and other regions in which there has already been substantive work on a range of trans-boundary animal diseases.
171. Collectively the existing systems have helped to clarify multiple routes of viral spread;<sup>(38)</sup> seasonal variation in virus activity; diversification and displacement of virus lineages;<sup>(87)</sup> host range of susceptible species; the possible significance of host genetic susceptibility in humans;<sup>(105)</sup> identification of virus reservoirs; and modes of transmission.<sup>(94)</sup> These systems and sentinel schemes for monitoring influenza-like illness also highlight the need to link virological surveillance with analysis of the immune response, morbidity and mortality in people<sup>(68)</sup> and the wider range of susceptible species.<sup>(58, 50)</sup>
172. There have to date been few systematic sero-prevalence studies of H5N1 exposure among people. Prevalence in Hong Kong poultry workers in 1997 was 10%, in cullers 3%, and 0% in the general population.<sup>(117)</sup> Elsewhere, sera were negative from Thai health care workers, and from populations in Djibouti, Nigeria, Kazakhstan, and Mongolia; although some close relatives of Vietnamese patients were sero-positive.<sup>(117)</sup> A perplexing observation in several recent vaccine trials in healthy adults has been the unexplained prevalence of H5N1 antibodies in groups of Americans (3%,<sup>(95)</sup>), Chinese (2.5%,<sup>(53)</sup>), and French (0.7%,<sup>(12)</sup>).
173. There is a clear need for improved rapid diagnostic tests to aid screening and sampling for both animal and human surveillance. There is also a case for seeking innovative ways to manage existing constraints on laboratory capacity to cope with potential surges in demand. These considerations are separate from those underlying the need for near-patient tests to aid clinical decisions on treatment.<sup>(68)</sup> This suggests that there may be an argument for building on current laboratory based networks to develop a dedicated high through-put international surveillance system.<sup>(52)</sup>

#### 5.4 PANDEMIC INFLUENZA: CHOOSING CONTAINMENT AND MITIGATION STRATEGIES

174. Building on mathematical models of alternative strategies for containing an emergent pandemic at source,<sup>(33, 55)</sup> the WHO's revised draft protocol for rapid response and containment (30<sup>th</sup> May 2006)<sup>(114)</sup> provides guidance and checklists for the essential prerequisites of success. Consultations are in hand in order to develop country-specific implementation proposals. Training curricula are in development for field teams. Particular challenges are likely to be posed by densely populated urban areas, where rapid detection and response with targeted measures will be critical.<sup>(25)</sup>
175. Policy options for containing the spread of infection and for mitigating its wider consequences cover a range of pharmaceutical and non-pharmaceutical interventions. Initial modelling studies on pandemic influenza mitigation have explored a full range of interventions individually and in combination.<sup>(34, 37, 55)</sup> Potential measures could apply at the levels of the individual (personal hygiene and respiratory etiquette, mask wearing, anti-viral treatment, isolation, vaccination), household (anti-viral prophylaxis, quarantine), school and workplace (closure, distance working), and the broader community (travel restrictions, cancellation of mass events, mass vaccination). The concept of a Rapid Response and Containment protocol proposed by the WHO refers to a specific strategy for attempting to stop a potential pandemic once there is evidence that a new virus with pandemic potential has appeared.<sup>(114)</sup> This is quite distinct from the concept of "targeted layered containment", which refers to measures designed and implemented specifically for the varied levels of the population in order to mitigate the effects of a pandemic (that is, to flatten and perhaps postpone the curve). Policy measures targeting different social contexts are likely to have additive effects.<sup>(33)</sup> In practice, it is possible that "containment" policies at the onset of a pandemic could shade into "mitigation" strategies if initial efforts fail to contain spread.



176. Limited anti-viral supplies, and constraints on rapid development of pandemic vaccines, have focused attention on requirements for non-pharmaceutical strategies alone to succeed. However, competing models critically depend on assumptions about the efficacy of non-pharmaceutical interventions for which there are often few or no underlying data to support parameter estimation, and for which the impact is likely to vary with social structure and virus transmissibility ( $R_0$ ).<sup>(35)</sup>
177. Some analysts have argued that “targeted layered containment” is feasible for an urban population contact structure in which children and teenagers (perhaps 29% of the population) account for 59% of infectious contacts in a pandemic resembling that of 1957-58 ( $R_0$  1.6). Thus targeting this sub-group through school closures combined with restriction to the home for the duration of the pandemic could be effective.<sup>(40)</sup>
178. At higher levels of transmissibility, however, broader population strategies become necessary for containment. High compliance is critical under these policy conditions. Implementation is therefore likely to be challenging. Changing the assumed proportion of infectious disease transmission occurring in schools and workplaces has a marked impact on the modelled efficacy of socially targeted policies.
179. For example, a different mitigation model<sup>(34)</sup> assumes that 37% transmission occurs in schools and workplaces, with 33% in random community settings; then at high pandemic transmissibility ( $R_0$  2.0), school closure for three or more weeks following a first case, with 10% workplace closure reflecting some worker absenteeism, would reduce the clinical attack rate from 34% to 28-29%. Altering the proportion of transmission to 57% in schools and workplaces and 13% in random community settings itself reduces the clinical attack rate from 34% to 27% because mixing is more centred on school-aged children; and combining reactive school closure with anti-viral treatment reduces this to 18%: a greater effect would be achieved by school closure alone. At  $R_0$  1.9, there is a model<sup>(34)</sup> suggesting that epidemic control could be achieved by targeted layered containment in which there is at least 50% generic and workplace “social distancing” and effective school closure in which 60% of households with children isolate them in the home.
180. In the absence of substantive evidence on non-pharmaceutical interventions, there may be a case for giving greater weight to direct measures: hand hygiene, respiratory etiquette, rapid viral diagnosis and triage, isolation only in hospitals in the early pandemic period, and enhanced social services support.<sup>(42)</sup> In this context, targeted layered containment is not an alternative to evidence-based approaches, including deployment of antivirals and vaccines. Where targeted social control measures are applied there should in principle be opportunities for policy review. National authorities will need effective real-time surveillance to enable them to formulate, communicate and implement policy changes as a pandemic unfolds. Where responsibilities for health are variably shared between central (or federal) and local authorities, then variation in design and enforcement of non-pharmaceutical measures within countries will further complicate the pandemic response.

### *Mitigation and Ethics*

181. The economic and poverty implications of avian and pandemic influenza policies need to be analysed in advance, then monitored and addressed in practice. For avian influenza, recent field studies in Ethiopia,<sup>(13)</sup> in Asia<sup>(29)</sup>, and elsewhere<sup>(62)</sup> have provided insight into the economic and social significance of poultry for the less well-off in society. These therefore suggest the probable impact of avian influenza and related control measures. However, there have been few such published studies of avian influenza.
182. There appear to be no studies explicitly addressing the implications for the disadvantaged of strategies to mitigate an influenza pandemic. There is an apparent need to fill gaps in the evidence base on the impact of control measures on disadvantaged groups; to monitor regularly their effectiveness; to identify and where necessary fill gaps in systems for providing information to people and for

receiving reports from them; and to monitor surveillance resources and their impact on animal and public health infrastructures.

183. For these and broader ethical reasons, an international group of experts in this field supported by the Rockefeller Foundation has issued a statement of principles accompanied by a set of checklists designed to ensure that governments, inter-governmental and non-governmental organisations take account of the interests of the disadvantaged in avian and pandemic influenza planning. The Bellagio Statement and checklists are in Annex III.
184. Broader ethical issues surround alternative policies for influenza pandemic containment and mitigation. These have been reviewed recently from a number of viewpoints.<sup>(4,24, 45, 99,103)</sup> A simple consensus is not easily achieved in this field. However, there is a case<sup>(73,99)</sup> for encouraging policy-makers to identify and address in advance the ways in which each element of policy is likely to impinge on (a) social values including individual liberty, protection of the public from harm, proportionality, privacy, duty to provide care, reciprocity, equity, trust, solidarity, and stewardship; and (b) procedural values including reasonableness, openness and transparency, inclusiveness, responsiveness, and accountability.
185. From an international standpoint, there is a case for predicting that the more severe a pandemic, the more likely it will be to exacerbate health inequalities<sup>(67)</sup>. Greater severity may also strengthen the narrowly perceived importance of “the national interest”, diminish the effectiveness of international law, lead to human rights violations, and weaken the prospects for effective international equity monitoring.<sup>(4)</sup> In this context, governments are likely to respond primarily to policy recommendations combining “the national interest” with human rights, ethical values and the perceived effectiveness of overseas programmes so that containment strategies may seem more likely to be accepted than international resource-sharing policies. On the other hand, the probable initial scarcity of a prospective pandemic vaccine could argue for its international allocation by a non-governmental organisation, United Nations or regional mechanisms rather than by a single nation, although some national authorities might feel morally obliged to assist neighbouring states. Recent discussions in various international fora have begun to consider these challenges.
186. The Department of Ethics, Trade, Human Rights and Health Law (SDE/ETH) in collaboration with the Department of Epidemic and Pandemic Alert and Response (CDS/EPR) of WHO, held a Global Consultation on Addressing Ethical Issues in Pandemic Influenza Planning in October 2006 and this will result in comprehensive and practical guidance that will become part of WHO's advice to Member States on how to proceed in preparing for, and responding to, an influenza pandemic. An online Ethics Forum has been set up to enhance global collaboration and exchange on this issue<sup>(125)</sup>
187. WHO Influenza Pandemic Task Force held its first meeting on September 25<sup>th</sup> 2006.<sup>(126)</sup> The Task Force, whose current full membership is 21 members, has been established to comply with the 2006 World Health Assembly Resolution It will advise WHO on potential public health issues of international concern related to avian and pandemic influenza, including issues such as the appropriate phase of pandemic alert, the declaration of an influenza pandemic, and appropriate international response measures to a pandemic.
188. The Task Force is a temporary body which will advise WHO until the International Health Regulations 2005 (IHR) come into force on 15 June 2007. At that time, an emergency committee will be convened if and when needed to advise WHO on disease events of international public health importance, but the creation of this temporary Task Force already allows WHO to begin implement the spirit of the IHR.
189. The task force recommendations<sup>(124)</sup> included:
  - WHO to develop further clarification on the criteria for moving between pandemic alert phases; endorsement of the steps proposed by WHO to strengthen the WHO Collaborating

Centre system on influenza; and recommendations that WHO work to strengthen further both influenza laboratory and disease based surveillance.

- Endorsement of the WHO proposals for best practices in sharing of influenza viruses/specimens and genetic sequences; and recommendations that after further refinement they be put before the WHO Member States for further consideration.

## **5.5 FLEXIBLE FINANCING FRAMEWORK AND FUNDING FLOWS**

### **PREPARATIONS IN THE FINANCIAL SECTOR FOR A HUMAN PANDEMIC: ROLE OF THE IMF**

190. The IMF is actively involved in encouraging member countries to prepare business continuity plans for the financial sector to overcome the disruptions that will result from a human pandemic. The difficulties that could affect the global financial system in the case of a pandemic could also spill over into other jurisdictions. Therefore, the IMF efforts are focusing on creating awareness among a broad audience of central banks and supervisory/regulatory institutions. Regional seminars are being organised to discuss the operational risks to payments, clearing and settlement, and trading systems, and the volatility that could affect the markets. In these seminars, there are intensive discussions with representatives from financial institutions that are more advanced in their planning—both official and private—regarding the nature of risks, needed elements of contingency plans, and initial steps in preparing and then testing contingency plans.
191. The IMF has offered this year nine regional seminars.<sup>3</sup> A total of more than 155 representatives from national regulatory authorities or central banks in 119 countries have participated in these seminars. Two more seminars are planned for early December for Latin American and the Caribbean supervisors and regulators.
192. In response to the interest expressed by participants in these seminars, the IMF is taking steps to set up a contact network for financial sector authorities to facilitate the exchange of information on business continuity and pandemic preparedness within the financial system.

### **FUNDING FLOWS**

193. At the international conference in Beijing in January 2006, donors pledged assistance in the context of a flexible, multidonor framework designed to take account of contributions channelled in ways that fit best with donors' own systems. Donors pledged support (in cash, grants, loans or in-kind) for the following purposes and recipients:
- Developing countries, for integrated country programmes.
  - Regional organisations, for a range of technical assistance, stockpiling, and coordination activities.
  - International technical agencies at the global level.
  - The AHI Facility, a multi-donor trust fund facility based at the World Bank, for provision of grants to country, regional, or global recipients.
194. In preparation for the International Conference on Avian and Pandemic Influenza in Bamako on December 6-8, 2006, the World Bank polled bilateral and multilateral donors on their progress on commitments and disbursements under the AHI financing framework; the data reported by donors to the World Bank on pledges, commitments, and disbursements as of October 31, 2006 are shown in the tables in Annex VI. The World Bank will continue to work with donors to refine the clarity and detail of their pledge, commitment, and disbursement data. Donors must take care to ensure that their

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<sup>3</sup> They were held in Vienna, Tunis, Pretoria, Singapore, Washington DC, Basel, Mumbai, Hong Kong and Abu Dhabi.

reported funding focuses on the main elements of the agreed global strategy and represents only external funds available for developing countries.

195. The following table provides an overview of donor performance in supporting AHI activities during the period of calendar year 2005 through to October 31<sup>st</sup> 2006 (Table 10 in Annex II shows support provided by all donors). Donors reported commitments of \$1,358.6 million (equivalent to 74 percent of the amount pledged), of which \$742.3 million (equivalent to 55 percent of the amount committed) has been disbursed. Out of disbursements, 63 percent was in cash and 37 percent was in kind. The rates of commitments and disbursements to AHI programmes have been very high compared to international responses to major natural disasters, such as the Indian Ocean tsunami of December 2005, reflecting the strong support from the international donor community to fighting avian and human influenza. Indeed, the vast majority of bilateral donors as well as the European Commission, have exceeded their Beijing pledges and in just over one year, many have already disbursed most of their commitments. Among the ten largest donors, those with the highest disbursement rates were Japan (with more than 95 percent of commitments already disbursed, mainly to international technical agencies and regional organisations), United States (with strong support to countries as well as regional activities), UK (with support to the AHI Facility), France (with support mainly to international technical agencies), and the European Commission (with support channelled mainly to countries through the AHI Facility and to regional organisations). The disbursement rates from the multilateral development banks, which stood at 15 percent, reflect the fact that most of the country programmes were launched only several months earlier; moreover, the medium-term, multi-year, nature of the programmes that are being put in place to tackle AHI at the country level will be reflected in lower disbursement rates than those for in-kind assistance or support to international technical agencies.

#### Overview of Donor Performance (as of October 31<sup>st</sup> 2006, \$ million)

	Beijing Pledge	Commitments	Disbursements	% Disbursed	Uncommitted
	A	B	C	C/B	A-B
United States	334.0	377.3	323.8	86%	-43.3
Japan	155.0	185.8	177.0	95%	-30.8
Australia	55.9	61.3	19.9	33%	-5.4
Germany	28.6	51.1	2.3	5%	-22.5
United Kingdom	36.4	39.7	22.9	58%	-3.3
France	31.1	33.5	17.5	52%	-2.4
Russia	23.7	31.9	9.9	31%	-8.2
Other bilateral	77.2	112.3	63.0	56%	-35.2
European Commission	124.4	185.4	63.0	34%	-61.0
Multilateral Dev't Banks	968.5	280.6	43.0	15%	688.0
<b>Total</b>	<b>1,834.7</b>	<b>1,358.6</b>	<b>742.3</b>	<b>55%</b>	<b>476.1</b>

196. Among the highlights, twenty-four donors have already fully committed or exceeded their Beijing pledge. The five largest donors (those pledging over \$100 million) have reported significant progress.

- The United States has committed \$377 million (of which \$324 million has been disbursed) and is an active donor in providing services and grants to a wide range of countries and other recipients.
- Japan has exceeded its Beijing pledge and committed \$186 million (of which \$177 million has been disbursed) to a range of countries and organisations at the regional and global levels. Through the Policy and Human Resources (PHRD) trust fund, Japan is providing co-financing to World Bank-financed operations under the Global Programme for Avian Influenza (GPAI).
- The European Commission has exceeded its Beijing pledge and committed more than \$185 million (of which \$63 million has been disbursed). The European Commission is the largest donor to the AHI Facility. The combined European Commission and EU member state commitments total \$360 million.

- The Asian Development Bank has committed \$79 million, which includes about \$19 million to WHO and FAO, and has a significant pipeline of operations underway for national and regional projects in Asia.
- The World Bank has developed a project pipeline under the Global Programme for Avian Influenza (GPAI), endorsed by the Executive Board in January 2006 for funding up to \$500 million. Financing totalling \$195 million has been approved for projects in thirteen countries as at October 31, 2006 – Albania, Armenia, Azerbaijan, Georgia, Kyrgyz Republic, Lao PDR, Nigeria, Romania, Tajikistan, Turkey, Vietnam, and West Bank and Gaza – and work is underway in more than twenty other countries.<sup>4</sup>

197. Table 11 in Annex II summarizes the distribution of assistance among the main recipients and sources of financing. \$509 million (equivalent to 38 percent of the total) is in support of country programmes (in addition, \$75 million is being channelled to countries through the AHI Facility), \$240 million (equivalent to 18 percent of the total) is for international organisations, such as WHO, FAO, OIE and UNICEF, while the remaining 39 percent is for regional organisations and other activities (see details in Table 4b in Annex IV). Bilateral donors are providing \$893 million, or almost two-thirds of total commitments.

198. Compared to the situation which the international community reviewed at the Vienna conference in June 2006, there are substantial increases in some of the bilateral commitments, primarily from the United States (\$43 million), Japan (\$27 million), Germany, (\$12 million), and the UK (\$10 million); the European Commission and the World Bank also increased their commitments significantly (by \$7 million and \$83 million, respectively). Canada and the AfDB, which did not pledge in Beijing in January 2006, reported commitments of \$34 million and \$5.5 million. Norway’s commitment amount is \$10.5 million; this does not include Norway’s contribution of \$31 million to the UN Central Emergency Response Fund (CERF), which was erroneously included in the commitment amount stated in the June 2006 report *Responses to Avian and Human Influenza Threats*.

199. Commitments received by developing countries in support of integrated country programmes reached \$530.5 million (including \$12.4 million from the AHI Facility and \$9.5 million from the PHRD trust fund). The top recipients include Vietnam (\$88 million), Indonesia (\$67 million), Nigeria (\$59 million), Turkey (\$46 million), Romania (\$42 million), Lao PDR (\$27 million), and Cambodia (\$27 million). Nearly half of the support received by countries is primarily in the form of loans (from the multilateral development banks) while 15 percent is in kind. The composition of assistance to countries is as follows:

In kind	79.6	15%
Grants	213.7	40%
Loans	236.0	45%
<b>Total</b>	<b>530.5</b>	<b>100%</b>

200. Donors have also reported commitments of \$235 million to support key international agencies, including \$84 million to WHO, \$65 million to FAO, \$17 million to OIE, and \$49 million to UNICEF.

201. Continued donor support, especially in the form of grant funding, will be necessary to continue existing programmes and expand activities in developing countries with limited avian and human influenza response capacity. As is illustrated in Figure 16, the challenge posed by AHI has become more serious as the H5N1 virus has already appeared in 55 countries (compared to just 16 at the end of 2005). The urgency of acting both in countries already affected and in those at risk has never been greater. While country-level activities remain a key priority, balance between national, regional and international activities will be critical to ensure a global response that meets the evolving challenge. As is shown in Table 13, significant additional needs for country-level support have emerged over the

<sup>4</sup> See project pipeline available at [www.worldbank.org/avianflu](http://www.worldbank.org/avianflu)

course of 2006 in the newly-affected and at risk countries in Africa and the Middle East and in previously-affected countries in Asia. The relevant international organisations, as outlined in the Consolidated UN Action Plan, will require additional support as well.

202. The AHI Facility is a trust fund facility established at the World Bank to support countries' integrated programmes. The AHI Facility can co-finance operations supported by IBRD/IDA under the GPAI, or in countries where the Bank is not active, provide self-standing grants to governments or co-financing for other agencies' programmes. The AHI Facility can also provide grants to international organisations and to non-governmental organisations. As of October 31, 2006, about \$ 75 million equivalent in pledges were confirmed by eight donors (Australia, China, European Commission, Iceland, Korea, Russia, Slovenia and UK – see Table 13) and \$41 million has been received by the World Bank. Proposed grants for finance under the Facility are reviewed initially at country level by the government, UN agencies, in-country representatives of AHI donors, and relevant technical agencies. Grants are subsequently vetted by an internal review committee (within the World Bank), and any grant proposals that are not country-specific or are over \$3 million are submitted for review to the AHI Facility Advisory Board. The Advisory Board consists of the representatives of the Bank and of all donors who are committed to providing \$3 million or more to the AHI Facility, with UNSIC and OIE as observers. The inaugural meeting of the Advisory Board was held in Vienna on June 8, 2006; the second Advisory Board meeting was on December 8, 2006 in Bamako, Mali.<sup>5</sup>

#### **FUNDING FLOWS POST-SCRIPT**

#### **OUTCOME OF THE PLEDGING SESSION AT THE INTERNATIONAL CONFERENCE ON AVIAN AND PANDEMIC INFLUENZA IN BAMAKO**

203. The International Conference on Avian and Pandemic Influenza in Bamako in Mali on December 6<sup>th</sup> – 8<sup>th</sup> 2006, brought together senior representatives from more than 72 countries and international technical and financial institutions. Following two successful days of technical and ministerial meetings, donors reinforced their commitment to the global fight against avian and human influenza by pledging \$493 million in grants to support responses by developing countries and international technical institutions to the threat posed by the Highly Pathogenic H5N1 virus. Altogether 17 donors pledged additional funds. The leading donors at the Bamako summit were the European Commission and the European Union member countries (\$156.5 million); the United States (\$100 million); Canada (\$87.1 million); and Japan (\$67 million). These funds are additional to the nearly \$1.9 billion mobilised at the Beijing pledging conference in January 2006, and, together with financing from multilateral development banks, are expected to be adequate to cover priority programmes at the country, regional, and global levels during the next 9-12 months. To reduce the need for developing countries to borrow for AHI programmes, additional grant financing for country-level actions is needed and would facilitate faster progress in the fight against avian influenza and preparations for human pandemic influenza. The next ministerial and pledging conference on the international response to avian and pandemic influenza threats will be hosted by the Government of India and is planned to take place between October and December 2007. The outcome of the Pledging Session is detailed in the following table:

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<sup>5</sup> Information on the AHI Facility is available at [www.worldbank.org/avianflu](http://www.worldbank.org/avianflu), under the tab “Trust Fund Facility.”

**Outcome of the Pledging Session of the International Conference on  
Avian and Human Pandemic Influenza  
December 6<sup>th</sup> - 8<sup>th</sup> 2006 in Bamako**  
(\$ million equivalent)

Donor	Beijing Pledge	Bamako Pledge <sup>1</sup>	Total Pledge (Beijing + Bamako)
Australia	55.91	55.09	111.00
Canada	0.00	87.05	87.05
Finland	3.36	6.59	9.95
France	31.09	9.95	41.04
Germany	28.61	22.46	51.07
Japan	155.00	67.00	222.00
Luxembourg	1.24	0.25	1.49
Netherlands	13.68	6.97	20.65
Norway	7.90	3.40	11.30
Russia	23.70	8.16	31.86
Spain	2.98	0.58	3.56
Sweden	9.37	3.35	12.72
Switzerland	4.76	1.03	5.79
United Kingdom	36.36	18.18	54.54
United States	334.00	100.00	434.00
Other EU member countries <sup>2</sup>	13.60	0.00	13.60
Other countries <sup>3</sup>	20.21	0.00	20.21
European Commission	124.36	88.16	212.52
African Development Bank	0.00	15.00	15.00
Asian Development Bank	468.00	0.00	468.00
World Bank	500.50	0.00	500.50
<b>GRAND TOTAL</b>	<b>1,834.63</b>	<b>493.22</b>	<b>2,327.85</b>

<sup>1</sup> New contributions from 17 donors (additional to Beijing pledges) and commitments in excess of pledged amounts  
<sup>2</sup> Austria, Belgium, Cyprus, Czech Republic, Estonia, Greece, Hungary, Ireland, Italy, and Slovenia.  
<sup>3</sup> China, Iceland, Korea Rep., Saudi Arabia, Singapore, and Thailand.

## SECTION 6: CONCLUSIONS & RECOMMENDATIONS

204. The world is very likely to be affected by another influenza pandemic sooner or later. It may be caused by the H5N1 avian influenza virus which has already infected more than 260 people with a 60% fatality rate. Multiple strains of the H5N1 influenza virus have emerged in East and Southeast Asia and have rapidly spread into the Indonesian archipelago, and further westward into the Middle East, Europe, and Africa.
205. During 2006 there have been unprecedented efforts from governments, the private sector, community organisations and civil society to stamp out avian influenza at its source. At least 250 million domestic birds have died as a result of the virus or been culled in the effort to contain and eliminate the H5N1 virus. Bio-security in many commercial poultry farms has been improved and controls on the movement of poultry have been introduced in many countries affected by the virus. In addition, millions of poultry are being vaccinated.
206. Yet virus outbreaks continue to be detected – even within vaccinated poultry flocks– particularly in waterfowl, who do not always die. This means that communities which farm ducks commercially or keep ducks in their backyard will be likely to remain at risk of H5N1 infection even if powerful control measures are implemented among poultry populations. Outbreaks will continue to emerge unless control measures are also directed at the waterfowl that carry the virus and introduce into new locations.
207. The H5N1 virus is continually changing and has the potential to mutate to a form which can not only replicate in human hosts, but can be easily transmitted between them. Intermittent spread to humans is appearing at an increasing rate, and the virus continues to evolve. Humankind may have to live for years with the possibility that H5N1 will become the cause of the next influenza pandemic (unless we develop the capacity to predict how this might happen and, better still, to neutralise it).
208. Many countries have, during the last year, focused on improving poultry rearing practices in commercial operations and backyard farms, among chickens, turkeys and waterfowl to prevent outbreaks of H5N1. They have invested in better veterinary services – including surveillance, detection and incident response systems to control these outbreaks when they occur. Data presented in this report indicates evidence of progress, though analysis of individual country data reveals that there is still considerable progress needed before the epizootic of H5N1 can be brought under control.
209. The discussions at Bamako in December 2006 suggest that priorities for 2007 should include mainstreaming avian influenza prevention and pandemic preparedness. This requires:
  - a. intensified action to reduce risks to animal and human health associated with livestock (specifically poultry) rearing practice through up-grading veterinary services and improving bio-security;
  - b. further development of public health capacity to prepare for, detect, contain and mitigate infectious disease outbreaks, to be ready for the specific needs of influenza pandemic containment and mitigation and to communicate about disease outbreaks in a way that empowers people to reduce the risks they face and speed their recovery;
  - c. increasing capacity at national, regional and global levels to plan preparation for, response to and recovery from the non-health or “crisis” aspects of an influenza pandemic; and
  - d. improving the communications support needed to empower people to better their health through their sustained adoption of less risky behaviour and practice.
210. We conclude with the following broad messages and recommended priorities for international action in 2007:



## **POLITICAL COMMITMENT**

211. Maintain momentum: National leaders are encouraged to maintain their political commitment (a) to control H5N1 in animals and (b) to prepare for the next influenza pandemic.
212. Increase intensity: National leaders should continue to ensure that their control programmes are as strong as they can be. They must also advocate for predictability of outcomes in neighbouring countries through a more consistent and standardized approach to preparedness and response. This calls for a progressively greater focus on political efforts that are underway in both formal and informal inter-governmental forums.

## **SCALING UP TO THE INTERNATIONAL STANDARD**

213. Maintaining the momentum: Animal health and food safety regulators, private livestock producers and veterinary services must continue to work towards the implementation of bio-secure poultry rearing practices (in both commercial and backyard settings), in ways that approach the international standards promulgated by the OIE.
214. Increasing intensity: Governments must invest more funds, skilfully, in developing veterinary services (including surveillance, early warning and reporting and rapid reaction capacity), in the ability to restrict movement of poultry and other birds, and in the regulation of animal health. They need predictable and rapid capacity to cull birds exposed to (or at risk of) disease – with payment of compensation as appropriate. Human public health services that can detect, respond to, and contain human cases of avian influenza, and other serious infectious diseases, are an absolute priority for human security. This is mandatory under the International Health Regulations that come into force in June 2007. Yet many poorer countries cannot generate adequate amounts of human and financial resources with which to do this – particularly countries with tight domestic budgets.

## **SOCIAL MOBILISATION FOR CHANGES IN BEHAVIOUR TO IMPROVE ANIMAL HUSBANDRY AND HUMAN HEALTH**

215. Maintaining the momentum: People's engagement is key to improving animal and human health systems. Governments of many countries have started to encourage their people to reduce the dangers associated with avian influenza. They have provided unambiguous messages about the need to change animal rearing practices and reduce exposure to infected birds through a wide range of media. When avian influenza strikes, households keeping a few poultry – either for their personal use, or as a small-scale commercial operation – will be badly affected if measures to control the disease result in the culling of their flocks or the destruction of their property. They may also face increased costs as a result of the need to prevent infection (e.g. coops for chickens, vaccination etc) and find it harder to repay loans because prices fall or market regulations have changed. Mobilisation efforts must take account of the potential impact of avian influenza on poor people: if there is no compensation paid for culled birds, officials will not find it easy to negotiate people's engagement. Hence the emphasis, during the last six months, on minimising financial disadvantage resulting from changes to less dangerous poultry-rearing practices and on establishing best practice to compensate for animals culled in avian influenza control. Such support is particularly important among poorer people who own small numbers of birds and keep them in their backyard.
216. Increasing intensity: People's awareness is also a pre-requisite to sustaining the political impetus for continued action. In-depth campaigns are needed to ensure strong responses at the local level. They need to be supported by global awareness raising campaigns that create the climate for intensive and long-term changes in animal rearing and public health practice. Campaigns must be accompanied by regular evaluations of efforts to raise public awareness, to stimulate changes in behaviour, and to ensure that best practice is adopted across regions and countries. Information from the evaluations will be used to refocus campaigns as necessary. This activity should catalyse establishment of a movement: it should create space at all levels within which the Voluntary Sector can be part of the platform of support to national authorities, and within which private sector corporations can

contribute to the collective response and receive assistance with their particular needs. It should ensure science-based guidance on all issues related to avian and human influenza.

#### **DISASTER CONDITIONS RESULTING FROM AN INFLUENZA PANDEMIC**

217. Maintaining the momentum: Many countries have initiated important streams of work to prepare for public health, economic and social implications of an influenza pandemic and to see how these can best be mitigated through a combination of pharmaceutical and non-pharmaceutical interventions. The work has been informed by the results of work undertaken by different pandemic modellers. The importance of non-pharmaceutical interventions, including social distancing and self-isolation, reinforced by school closure and the banning of public meetings, has been outlined by different groups in the last few months. The momentum of planning for successful implementation of these interventions, over a period of several months, must be maintained so that the plans can be tested under local conditions in many developing and developed countries.
218. Increasing the intensity: While there has been substantial global work on the use of public health interventions for pandemic containment and mitigation, and significant regional activity in coordinated pandemic preparedness planning (e.g. in South East Asia), there appears to have been relatively little explicit global policy-making on the non-health-related elements of pandemic preparedness. For this to happen, disaster preparedness experts and pandemic planners need to be enabled to work together so as to plan responses to disaster conditions resulting from an influenza pandemic and prepare to implement these responses. Systems for communicating actions to be taken by the general public - and by specific groups - need to be rehearsed as part of pandemic preparedness.

#### **INSTITUTIONAL MECHANISMS FOR TECHNICAL AND FINANCIAL SUPPORT TO COUNTRIES**

219. Maintaining Momentum: In January 2006 countries undertook to develop integrated programmes for the control of avian influenza, upgrading of human health systems, social mobilisation and preparing for an influenza pandemic. During subsequent months they have developed programmes and costed them, usually with the support of FAO, OIE, WHO and UNICEF. They then engage with the World Bank and external donors who arrange that the programmes be subject to technical scrutiny and appraised in ways that take account of national implementation capacity and ways in which it might be enhanced.
220. The national authorities then share appraised programme plans – in country – with providers of external assistance. These tend to include loans from the multilateral development banks, grants from the multi-donor financing facility, direct bilateral grant aid, direct support from agencies of the UN system.
221. The findings in this report indicate ways in which assistance offered by the international community (in accordance with the principles adopted at Beijing in January 2006) are explicitly linked to the factors that indicate success. But the assistance pledged in January 2006 was limited to \$1.9 billion (about half of which was grant funding). By October 2006, around \$1.4 billion has been committed and \$721 million has been disbursed.
222. The report shows how six in-country factors are key to the success of influenza-related action with their focus on (i) political commitment, (ii) capacity to scale up animal and human health services, (iii) effective management of animal and human health with transparency of information and full reporting, (iv) extensive social mobilisation, (v) compensation for birds culled and property lost, and (vi) alliances involving private sector groups and voluntary bodies. The report indicates the perils encountered when external assistance and internal policy-making and implementation are not properly coordinated by national authorities and when external agencies cannot act in a synergistic manner. These are further investigated in a study of UN system coordination in relation to avian influenza and pandemic preparedness that is nearing completion. There is a need to continue to monitor external assistance in conjunction with the World Bank and other Development Banks, with a particular focus

on Africa; and to encourage better coordination at country level. This should stimulate operational continuity within governments, private sector and voluntary agencies, and the UN system including through establishment of an electronic network helping coordination to thrive.

223. **Increasing intensity:** The financial needs of the UN system and of African nations for all the areas identified above have not been fully met. In addition, the disbursement of funds through the existing channels is still slower than desirable. The UN System is proposing a new funding mechanism specifically designed for speedy support to the governments of countries that are not easily able to access funding from the existing channels – the UN system’s Central Fund for Infection Action (CFIA). The UN will also speed up disbursement of resources and management of outcomes during the next few months, working on this system through the UNSIC office.
224. The international community is being asked to pledge generously. Immediate requirements (for the next 2-3 years) were presented at the Bamako conference on December 8<sup>th</sup> 2006 as follows:

	Additional financing needed (\$M)
Countries of Africa (excluding North Africa)	466
Countries of East Asia and the Pacific	221-404
Countries of South Asia	85-113
Countries of the Middle East and North Africa	70-113
Countries of Eastern Europe and Central Asia	33-52
Countries in the Americas	5-7
International agencies† (global and regional functions in support of countries) WHO, FAO and UNICEF 205m, Other UN and partners 65m, CFIA 30m	300
OIE (global and regional functions) ‡	25
Total	1,203-1,476

Note: Source: World Bank update on financing needs (draft, forthcoming). † Specifically UN system agencies, requirements for 2007 only. ‡ World Organisation for Animal Health, requirements for 2007 only. A more complete analysis of these figures is contained in Annex II **Error! Reference source not found.**

225. Pledges of external financing support at the levels indicated above are required now to yield adequate disbursements in the next 2-3 years to countries with integrated programmes addressing avian and human influenza. Grant resources are a more suitable instrument to meet these needs than loans because grants will encourage recipient governments to put a higher priority on these programmes and reflect the global public good character of effective avian flu control. In addition, the financing gap for the UN systems agencies and partners is estimated at between US\$200 and US\$300 million in 2007 (Consolidated UN system Action Plan on Avian and Human Influenza: July - December 2006). The OIE financing gap will be of the order of US\$ 25m in 2007.

#### **SEVEN CONCLUDING PRIORITIES FOR 2007 DERIVED FROM THE ANALYSES IN THIS REPORT**

226. First, every effort should be made, at this time, to sustain the political commitment for national and international action on threats due to influenza: complacency (perhaps as a result of the successful implementation of control efforts in the last year) could undermine sustained responses to avian influenza and pandemic preparedness efforts within the coming years.
227. Second, in addition to the vital work of developing viable animal and human health systems throughout the world, special attention must be given to ensuring that systems and capability for rapid reporting and response to both animal and human influenzas are more equitably distributed across countries and regions than is currently the case.
228. Third, there is wide variation in mass communication activity on AHI, which implies the need for an overarching global communications campaign with a focus on interventions to support behaviour change that have the greatest chance of success in the longer term.

229. Fourth, there is much scope for societies to be mobilised and create a movement to reduce threats posed by avian and human influenza (and so contribute to human security) through governments engaging more intensively with non-governmental (private and voluntary) sectors in policy development, planning, implementation and review of progress.
230. Fifth: the joint approach that periodically brings together national authorities, as partners, in close interactions with the specialized agencies, funds and programmes of the United Nations system, the World Bank and other multilateral development institutions, as well as bilateral development and humanitarian agencies, and non governmental bodies, has a strong influence on the ways in which national authorities, civil society and the international community address influenza issues: it is generating invaluable synergy and an effective global response, and should be sustained.
231. Sixth: the challenges faced in developing robust intervention strategies and in implementing them at local and national level signal the need for continued international efforts to develop, produce and make available new tools and capacities in a variety of technical areas including (a) to permit rapid detection and characterisation of infections with influenza viruses (in animals and humans), (b) to compensate individuals whose property (including animals) are destroyed as part of a strategy to control the spread of disease and contribute to wider public good, (c) to ensure well-directed responses to the early stages of a suspected influenza pandemic, and (d) to mitigate the adverse social impact of an established pandemic particularly among vulnerable groups. This is in addition to the important work now underway for development and use of vaccines effective against potential pandemic influenza viruses.
232. Seventh: The international community is asked to pledge and then commit additional funds that permit maintenance – and intensification – of the efforts described in this report. It is vital that the opportunity of the Bamako conference is used to secure this outcome. Sustained financial provision will be necessary, at around US\$ 0.5 – 0.75 billion per year, until animal and human health services are brought up to the standards required by the OIE and WHO International Health Regulations, respectively, and the world's nations are collectively prepared to mitigate the threat of an influenza pandemic.

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## ANNEXES

### ANNEX I: NATIONAL AUTHORITIES REPRESENTED IN INFORMATION-GATHERING EXERCISES

Countries covered by the May-June and October-November 2006 information-gathering exercises on avian and pandemic influenza preparedness, listed by region as defined by presence of UNDP Country Offices and (otherwise) by geographical location.

Asia & Pacific	Africa	Middle East & North Africa	Europe & Central Asia	Americas
Afghanistan ‡	Angola	Algeria ‡	Albania ‡	Argentina ‡
Australia ‡	Benin	Djibouti ‡	Armenia ‡	Bahamas ‡
Bangladesh	Botswana	Iran ‡	Austria	Barbados
Bhutan ‡	Burkina Faso †	Jordan	Azerbaijan ‡	Belize
Cambodia ‡	Cameroon ‡	Kingdom of Bahrain	Belarus ‡	Bolivia ‡
China	Cape Verde	Kuwait	Belgium	Brazil ‡
India ‡	Chad ‡	Lebanon	Bosnia and Herzegovina ‡	Canada
Indonesia ‡	Comoros ‡	Morocco	Bulgaria ‡	Chile
Japan	Congo Republic	Oman ‡	Croatia ‡	Colombia
Korea DPR ‡	Côte d'Ivoire	Palestinian Territories (Occ.) ‡	Cyprus	Costa Rica ‡
Korea Republic ‡	Ethiopia	Saudi Arabia	Czech Republic ‡	Cuba
Lao PDR ‡	Gabon ‡	Somalia ‡	Denmark	Dominican Republic
Malaysia	Gambia, The	Sudan ‡	Estonia ‡	Ecuador ‡
Maldives ‡	Ghana	Syria ‡	Finland	Guatemala
Mongolia	Guinea-Bissau ‡	Tunisia	France †	Guyana
Myanmar	Lesotho	United Arab Emirates	Georgia ‡	Haiti
Nauru	Liberia	Yemen	Kosovo ‡	Honduras
Nepal	Madagascar †		Kyrgyz Republic	Jamaica ‡
New Zealand	Malawi		Latvia	Mexico
Pakistan	Mali †		Liechtenstein ‡	Nicaragua ‡
Papua New Guinea ‡	Mauritania ‡		Lithuania	Panama
Singapore †	Mauritius ‡		Macedonia ‡	Paraguay ‡
Solomon Islands	Mozambique		Malta †	Peru
Sri Lanka	Namibia ‡		Moldova ‡	Suriname
Thailand	Niger		Norway ‡	Trinidad and Tobago
Timor-Leste †	Nigeria ‡		Poland ‡	U.S. Mexico Border
Vanuatu	Rwanda ‡		Portugal †	U.S.A.
Viet Nam ‡	Sao Tome & Principe †		Romania ‡	Uruguay ‡
	Senegal		Russian Federation	Venezuela ‡
	Seychelles †		Serbia & Montenegro	
	Sierra Leone ‡		Slovak Republic ‡	
	Swaziland		Slovenia ‡	
	Tanzania ‡		Spain †	
	Togo		Sweden ‡	
	Uganda ‡		Switzerland †	
	Zambia		Tajikistan ‡	
	Zimbabwe		Turkey ‡	
			Turkmenistan ‡	
			Ukraine	
			United Kingdom ‡	
			Uzbekistan	

‡ National authorities represented in both May-June and October-November information-gathering exercises.

† National authorities represented only in the October-November exercise.

ANNEX II: ILLUSTRATIVE GRAPHS & TABLES

Figure 1

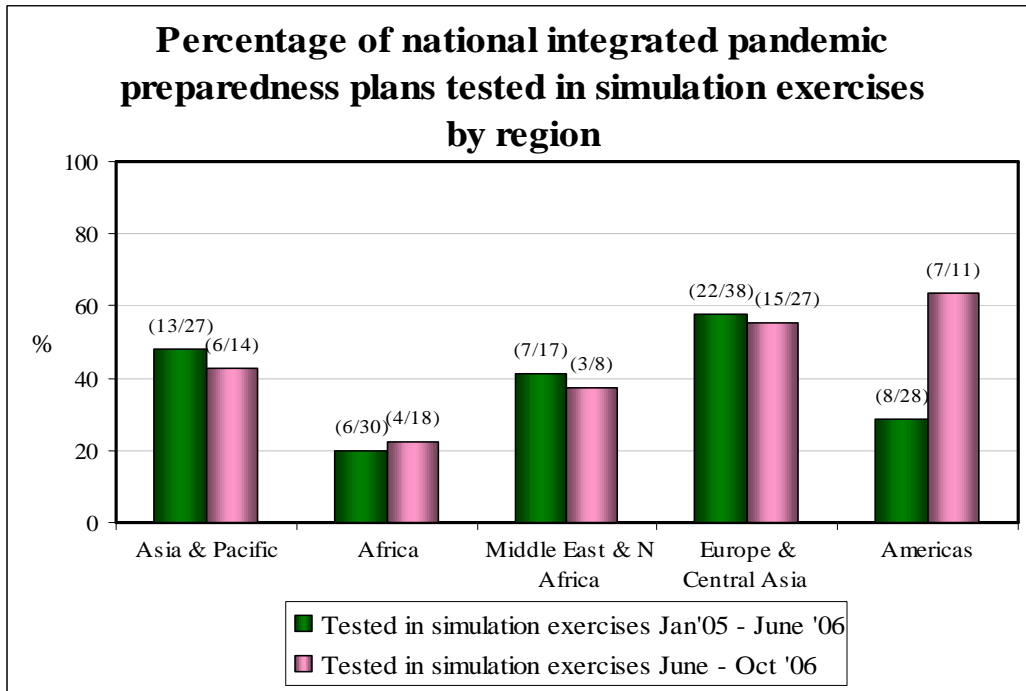
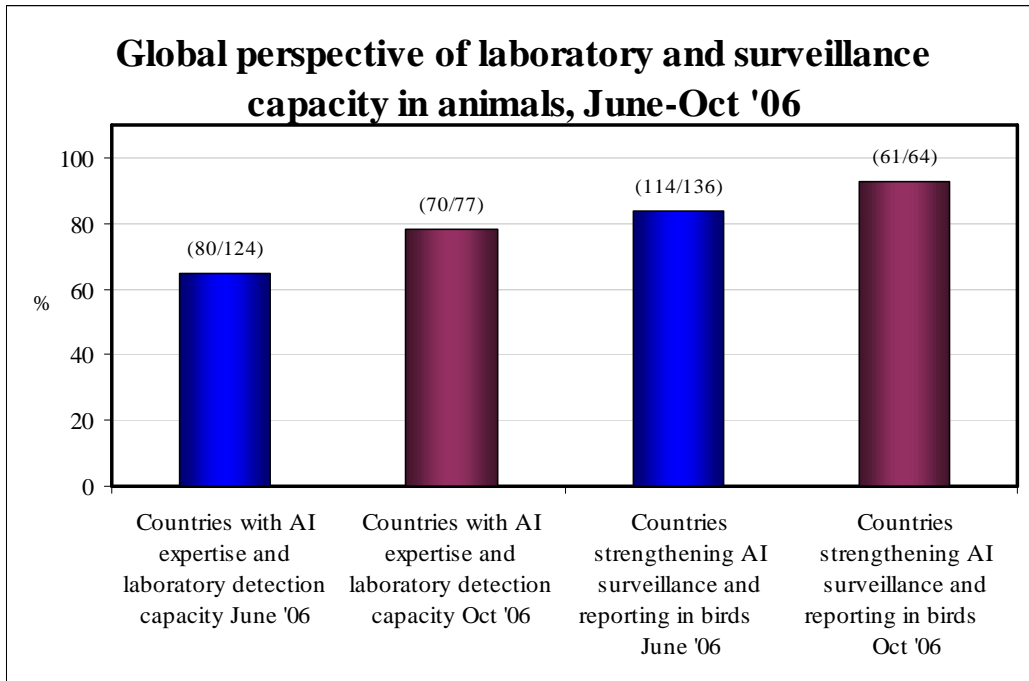
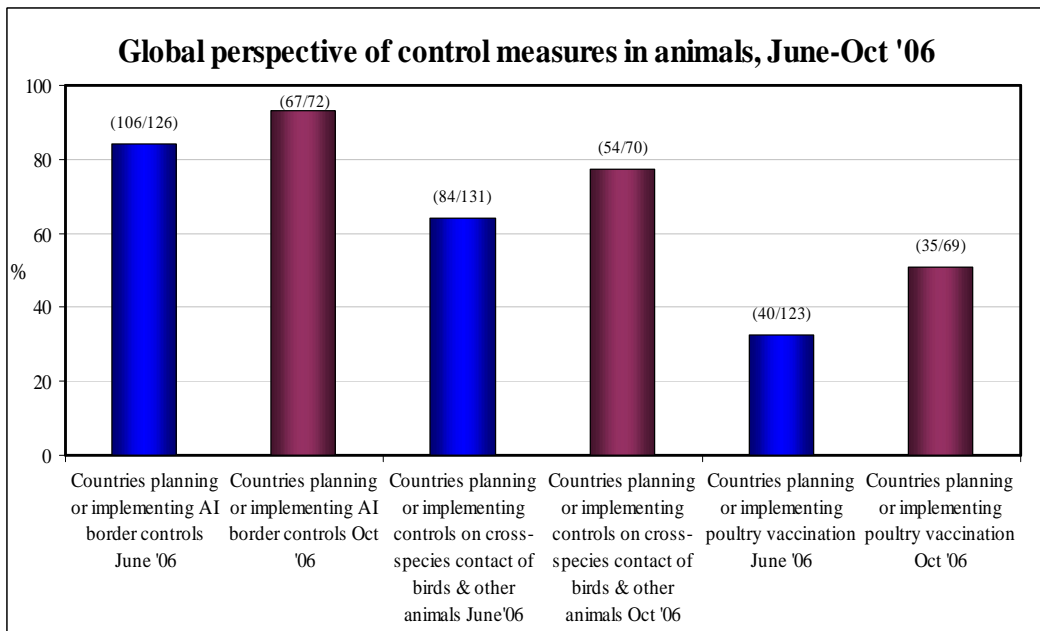


Figure 2



Note: Z-tests for the comparison of proportions across periods for each variable are statistically significant at  $p < 0.05$ .

**Figure 3**



Note: Z-tests for the comparison of proportions across periods are statistically significant at  $p < 0.05$  for policy on border controls and for poultry vaccination.

**Figure 4**

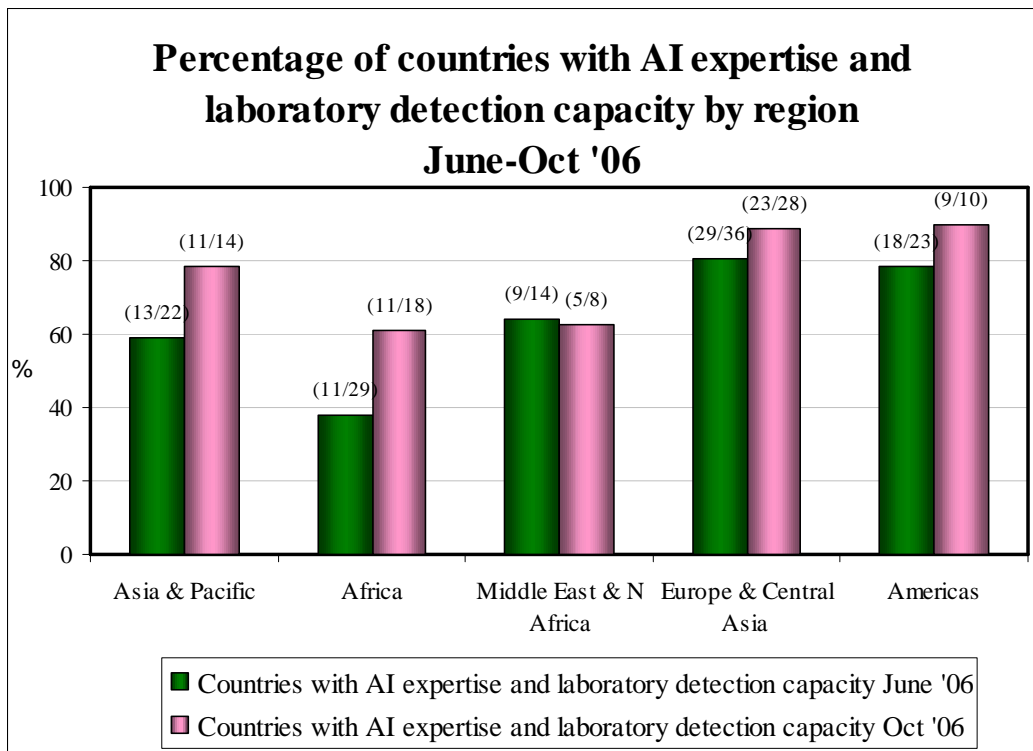


Figure 5

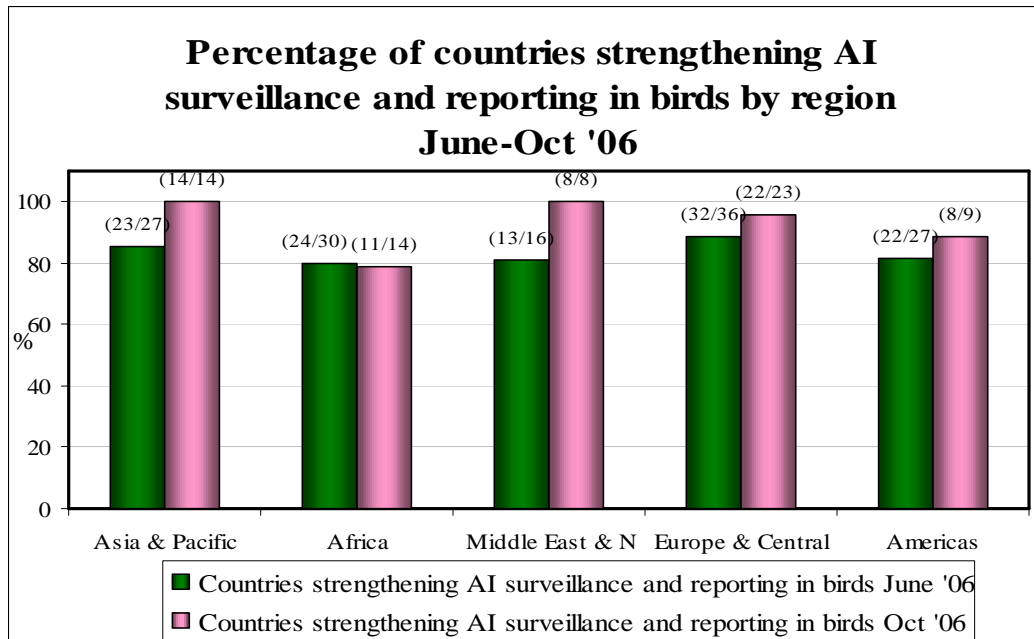


Figure 6

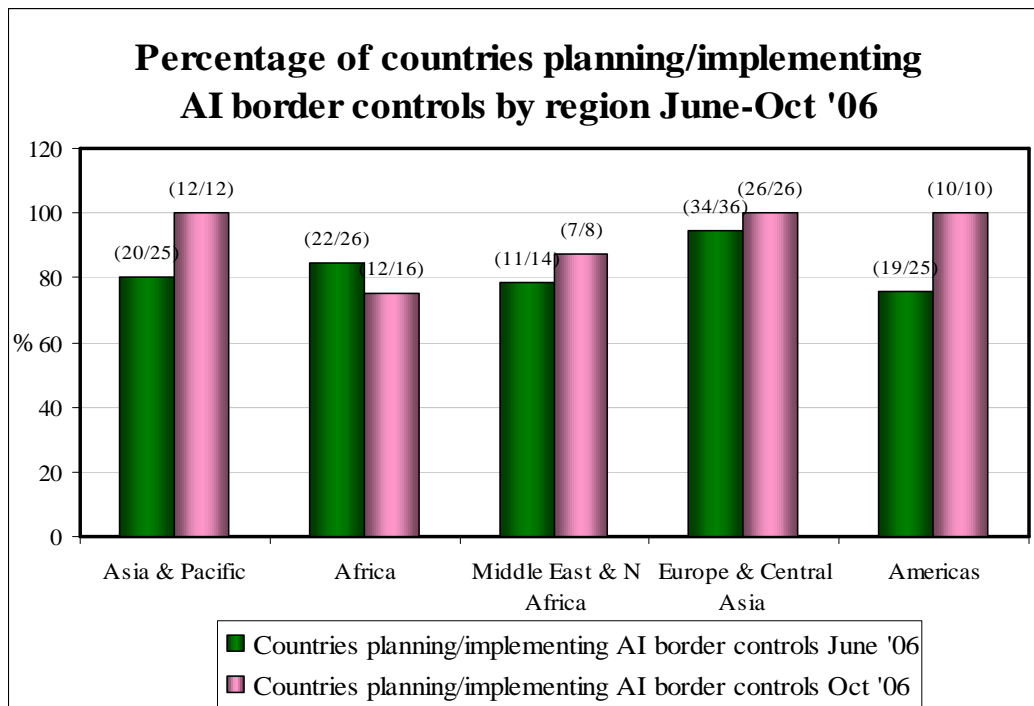


Figure 7

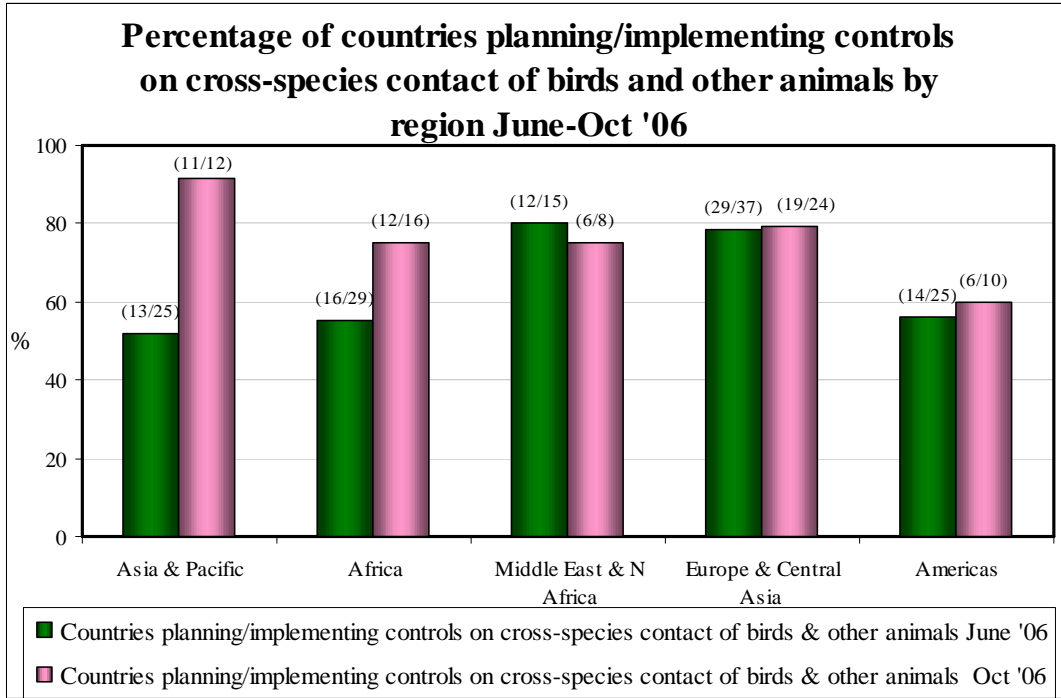
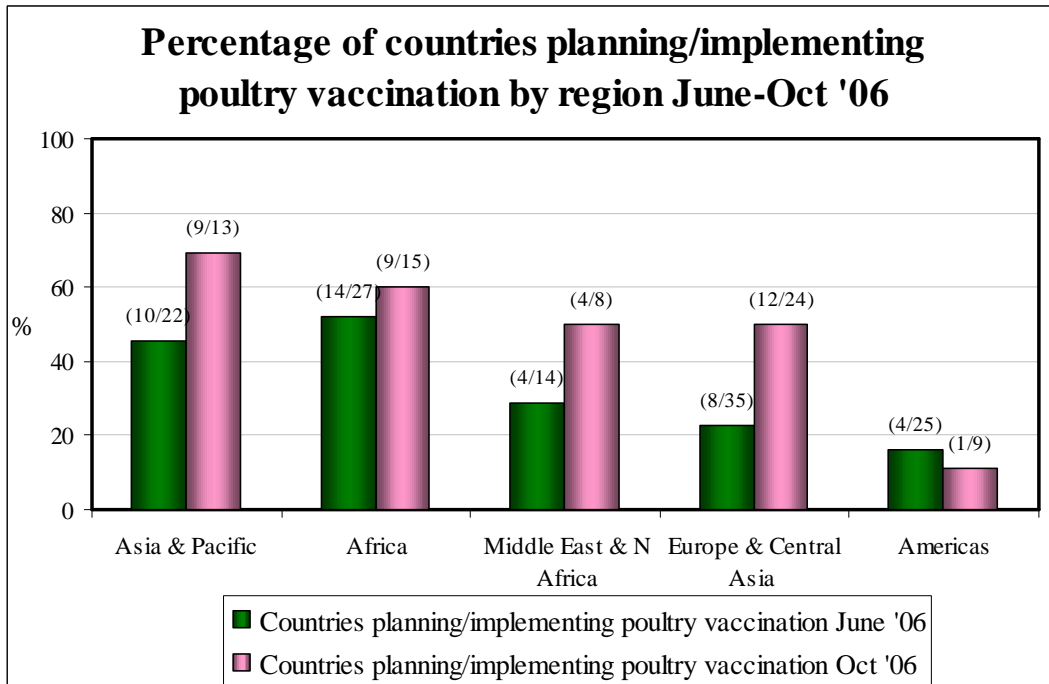
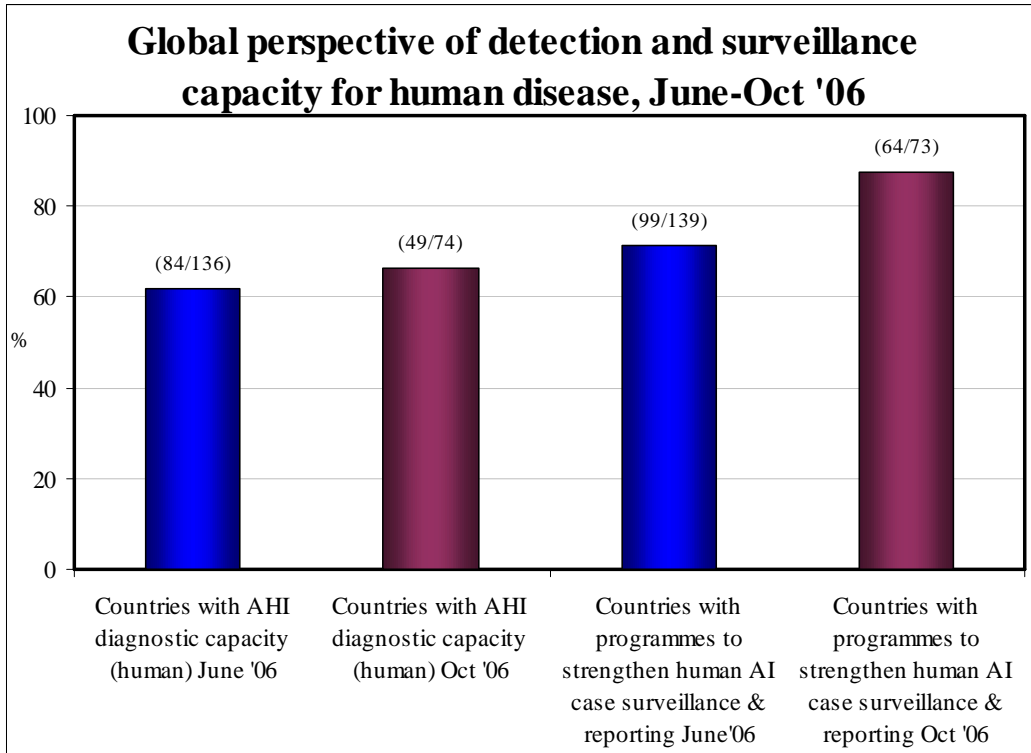


Figure 8



**Figure 9**



Note: The Z-test for comparison of proportions across periods for programmes to strengthen case surveillance and reporting is statistically significant at  $p < 0.05$ . There is no significant difference in diagnostic capacity.

**Figure 10**

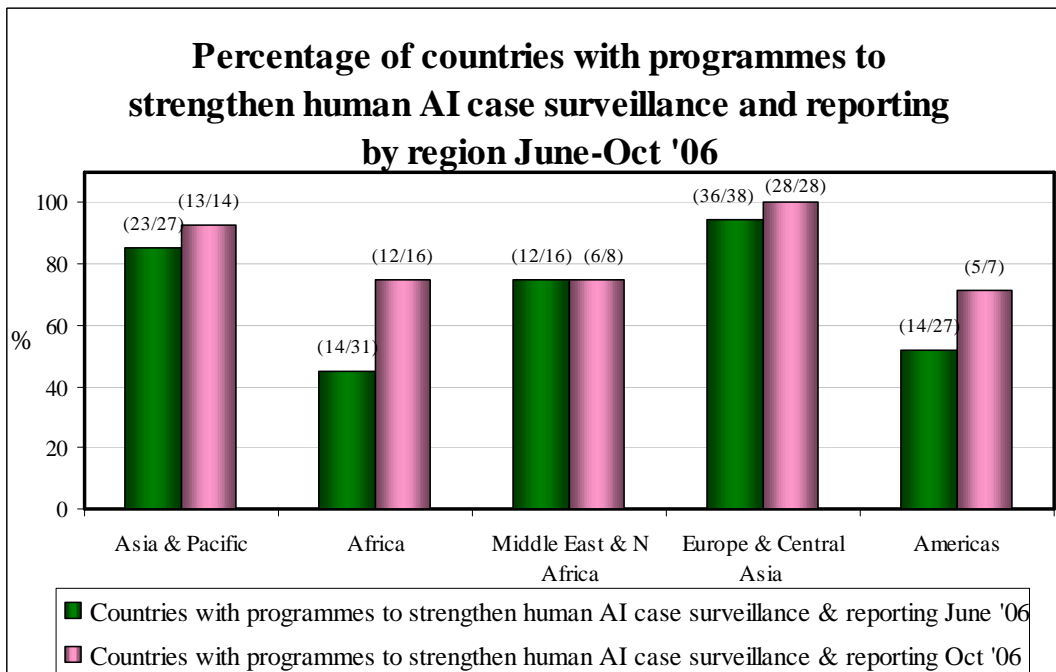


Figure 11

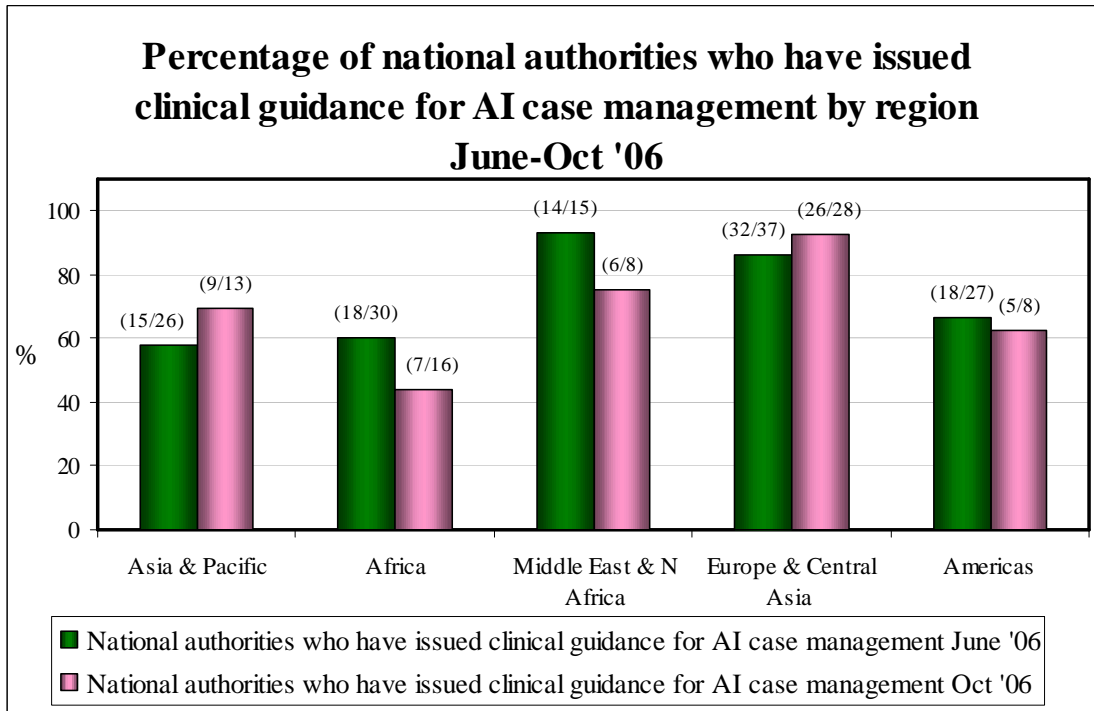
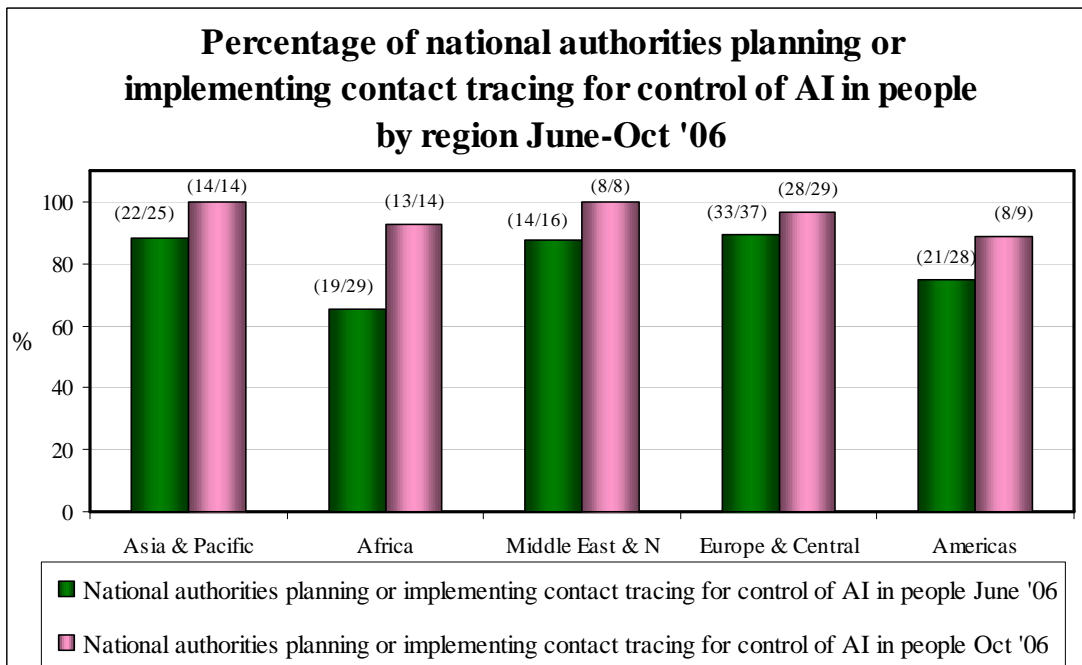
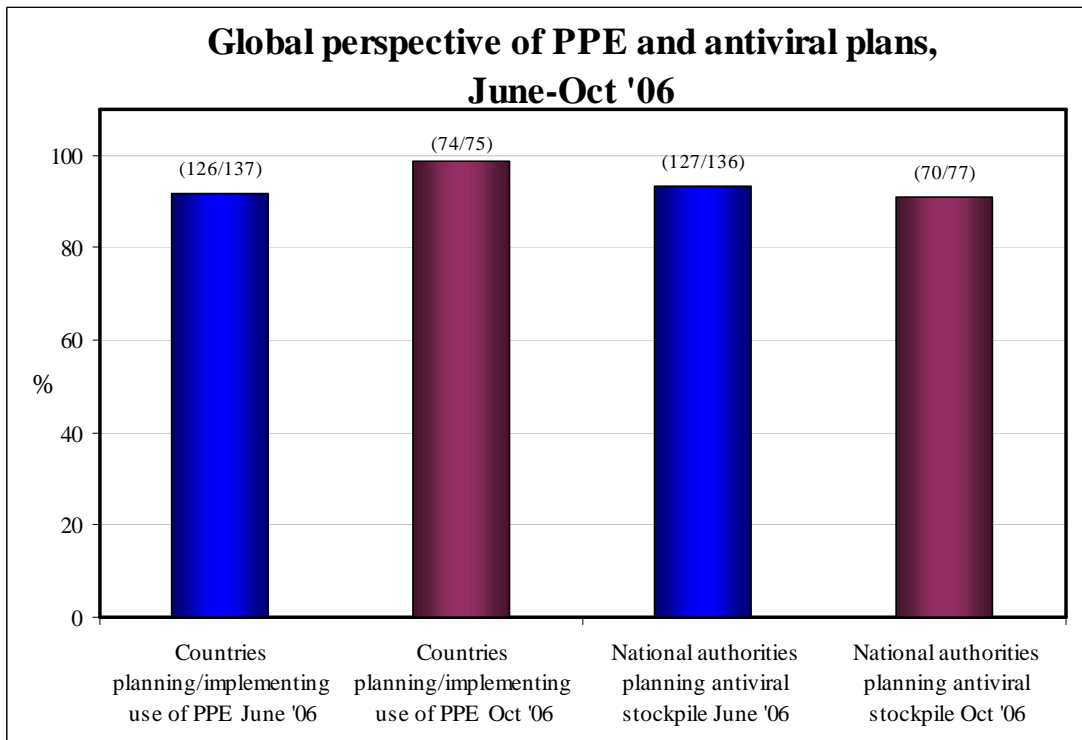


Figure 12





**Figure 13**



Note: The Z-test for comparison of proportions across periods for PPE use is significant at  $p < 0.05$ . There is no significant difference between periods for anti-viral stockpiling.

**Figure 14**

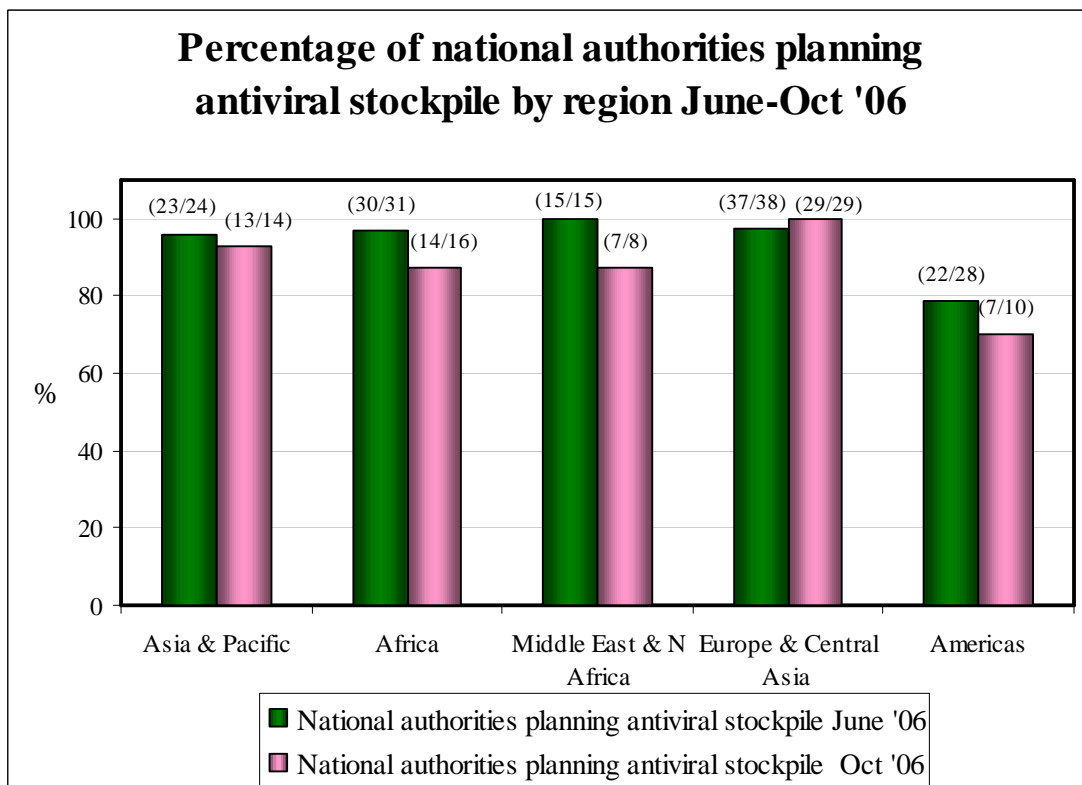


Figure 15

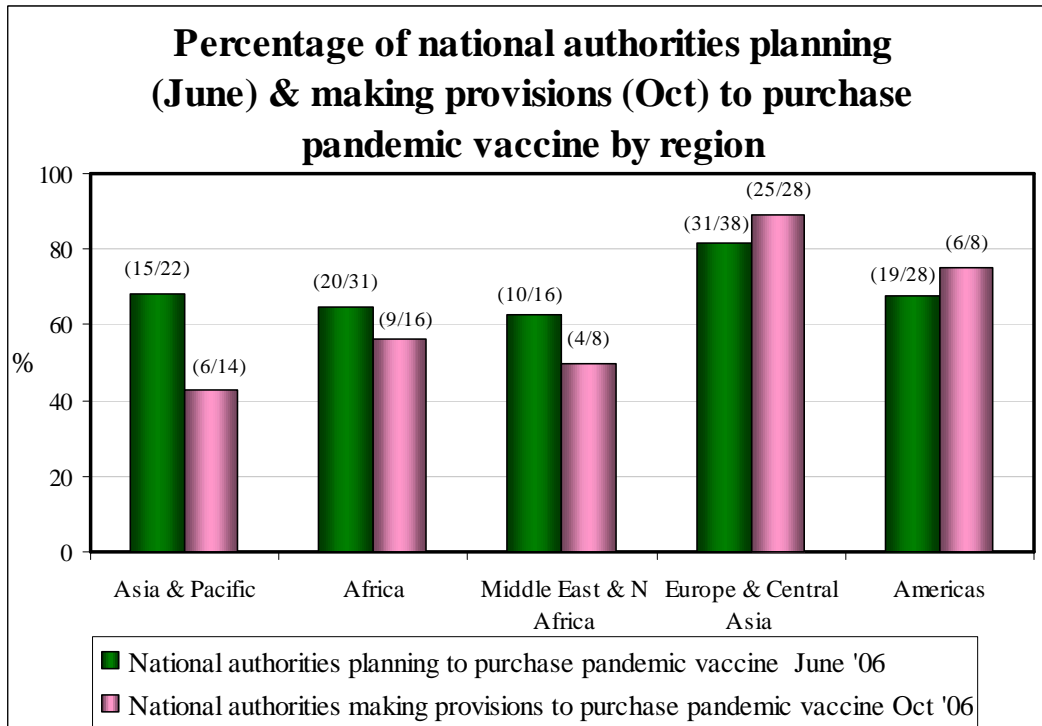
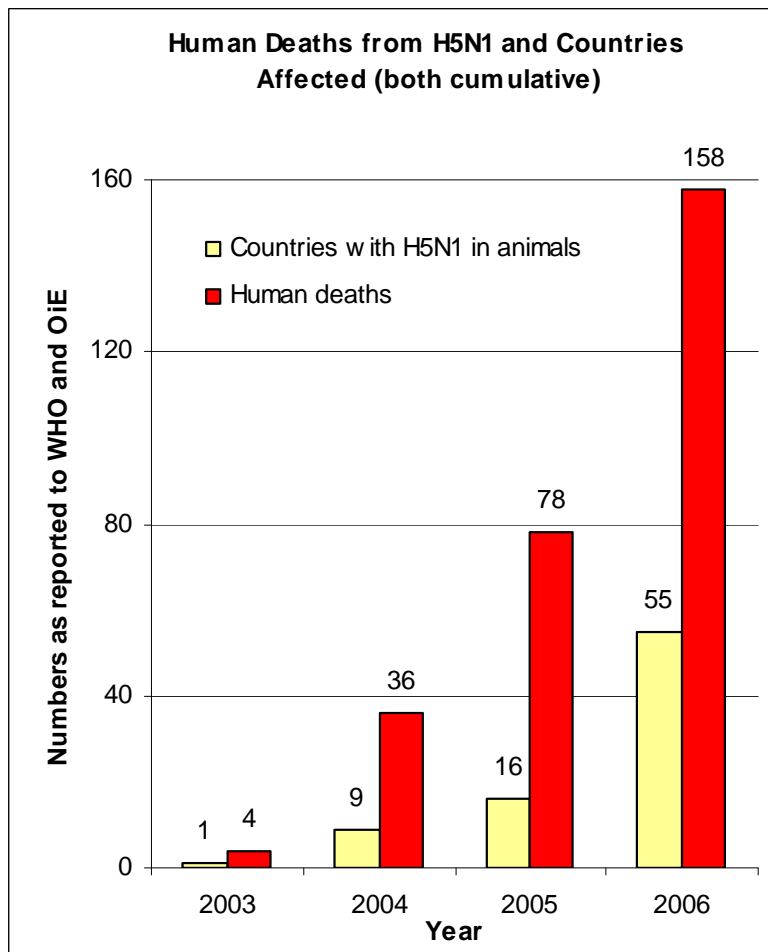


Figure 16



**Table 1**

	Asia & Pacific		Africa		Middle East & N Africa		Europe & Central Asia		Americas	
	June '06	Oct '06	June '06	Oct '06	June '06	Oct '06	June '06	Oct '06	June '06	Oct '06
Total number of countries responding to data gathering exercise, 2006	27	14	32	18	17	8	39	29	28	11
Number of countries with a national AHI taskforce	26	14	32	16	16	8	37	29	27	11
n=	26	14	32	17	17	8	39	29	28	11
Average number of AHI meetings in the last 6 months	10	10	11	8	14	7	13	10	7	6
n=	21	12	26	13	12	8	26	26	18	11
Number of countries with a central coordinating body	23	14	32	17	16	6	38	26	26	14
n=	26	14	32	18	17	8	39	28	28	11

**Table 2**

	Asia & Pacific		Africa		Middle East & N Africa		Europe & Central Asia		Americas	
	June '06	Oct '06	June '06	Oct '06	June '06	Oct '06	June '06	Oct '06	June '06	Oct '06
Total number of AI detection laboratories per region and number of countries reporting 1 or more labs	15	32	1	3	12	48	11	66	5	2
n=	6	11	1	6	4	7	3	20	2	8

**Table 3**

	Asia & Pacific	Africa	Middle East & N Africa	Europe & Central Asia	Americas
Controls on Cross Border Trade & Movement					
Planned	5	6	3	5	6
Implemented	8	3	4	20	3
Neither planned nor implemented	0	4	1	0	0
n countries=	13	13	8	25	9
Controls on species contact					
Planned	5	3	4	6	3
Implemented	7	7	2	11	2
Neither planned nor implemented	1	4	2	5	4
n=	13	14	8	22	8
Poultry vaccination					
Planned	6	4	0	8	1
Implemented	1	4	0	3	0
Neither planned nor implemented	4	4	3	11	7
n=	11	13	3	22	8

**Table 4**

	Asia & Pacific	Africa	Middle East & N Africa	Europe & Central Asia	Americas
Average number of veterinarians trained in HPAI detection since June 2006	512.4	11.2	98.8	140.4	109.6
n=	11	15	8	15	9
Average number of village vet workers trained in HPAI detection since June 2006	537.6	52.0	1913.3	816.6	116.0
n=	8	11	8	10	9
Average veterinarians trained in HPAI detection since June 2006/physicians per 1000 population	486.3	34.2	31.6	59.8	86.3
n=	10	6	5	11	7
Average village vet workers trained in HPAI detection since June 2006/physicians per 1000 population	1105.4	96.0	7500.9	211.9	29.7
n=	8	5	5	9	5

**Table 5**

	Asia & Pacific	Africa	Middle East & N Africa	Europe & Central Asia	Americas
Average number of clinical staff trained in AHI detection since June 2006	348	1085	11467	122	381
n=	6	5	3	11	7
Average number of village health workers trained in AHI detection since June 2006	249	2350	24000	214	0
n=	2	3	1	4	0

**Table 6**

	Asia & Pacific	Africa	Middle East & N Africa	Europe & Central Asia	Americas
Use of PPE					
Planned	5	12	5	12	8
Implemented	7	1	3	12	0
Neither planned nor implemented	0	0	0	0	1
n=	12	12	8	24	9
Case contact tracing					
Planned	7	10	4	17	8
Implemented	5	0	4	7	0
Neither planned nor implemented	0	1	0	1	1
n=	12	11	8	25	9

**Table 7**

Planned anti-viral stockpile size (treatments) as a percentage of the population (2005)		
	May-June	October-November
Mean average percentage cover of 2005 population	5.5%	11.0 %
Median average percentage cover of 2005 population	0.4%	3.1 %
Range in percentage cover	0.01% to 33.3%	0.002 % to 73.3 %
Number of countries	41	35

**Table 8**

Implementation of mass avian and human influenza communications campaigns (numbers of national authorities)					
	Asia-Pacific	Africa	Middle East & North Africa	Europe & Central Asia	Americas
Campaign implemented	8	12	6	23	3
Campaign not implemented	4	1	2	3	6
Total responses	12	13	8	26	9

**Table 9**

Existence and nature of poultry culling “compensation” schemes (numbers of national authorities)					
	Asia & Pacific	Africa	Middle East & N Africa	Europe & Central Asia	Americas
Compensation scheme in place	8	10	6	19	2
Uniform compensation rate	5	7	3	17	1
Farmer eligible for compensation	8	10	5	18	2
Household member(s) eligible for compensation	4	3	1	6	1
Number of countries represented	14	16	9	26	9
Number of countries in which “compensation” is provided at a given percentage of market value					
Less than 30% of market value	0	0	1	1	0
30%-50% of market value	4	3	0	1	0
50%-70% of market value	0	1	0	3	0
More than 70% of market value	4	4	3	13	1
Number of countries represented	8	8	4	18	1

**Table 10**

AHI Financing Framework as of October 31 <sup>st</sup> 2006 (\$ millions)				
	Donor	Pledge	Commitments	Disbursements
1	Australia	55.91	61.27	19.94
2	Austria	1.24	0.00	0.00
3	Belgium	3.11	2.99	2.86
4	Canada	0.00	33.94	6.77
5	China	10.00	2.00	0.00
6	Cyprus	0.03	0.03	0.00
7	Czech Republic	0.20	0.20	0.20
8	Estonia	0.04	0.04	0.01
9	Finland	3.36	9.95	9.95
10	France	31.09	33.46	17.47
11	Germany	28.61	51.06	2.33
12	Greece	0.75	0.38	0.38
13	Hungary	0.04	0.00	0.00
14	Iceland	0.40	0.40	0.00
15	Ireland	1.24	0.86	0.74
16	Italy	6.96	4.50	0.00
17	Japan	155.00	185.77	176.97
18	Korea, Republic of	5.71	4.07	2.91
19	Luxembourg	1.24	0.00	0.00
20	Netherlands	13.68	15.28	4.50
21	Norway	7.90	10.45	10.45
22	Russia	23.70	31.86	9.90
23	Saudi Arabia	1.00	1.00	1.00
24	Singapore	0.60	0.60	0.31
25	Slovenia	0.04	0.04	0.00
26	Spain	2.98	3.56	2.98
27	Sweden	9.37	12.72	12.58
28	Switzerland	4.76	5.79	4.74
29	Thailand	2.50	2.50	1.59
30	United Kingdom	36.36	39.67	22.85
31	United States	334.00	377.30	323.84
32	European Commission	124.36	185.36	62.99
35	African Development Bank	0.00	5.50	3.00
33	Asian Development Bank	468.00	78.95	15.70
34	World Bank	500.50	196.10	24.29
	GRAND TOTAL	1,834.67	1,358.60	742.25

**Note:** Donors' reports of amounts committed and disbursed during calendar year 2005 and through to October 31, 2006. **Commitment:** The result of an agreement between the donor and recipient for the designated purposes; a commitment is a firm decision that prevents the use of allocated amount for other purposes. **Disbursement:** Actual budget transfer or release of funds to the recipient for an intended purpose.

**Table 11**

Overview of AHI Commitments as of October 31, 2006						
Donors/Financiers	Countries <sup>1</sup>	AHI Facility	International Organisations	Regional Organisations	Other	Total
(\$ million)						
Bilateral Donors	220	17	220	156	280	893
European Commission	48	58	0	38	41	185
Multilateral Development Banks	241	0	20	0.34	19	281
Total	509	75	240	194	340	1,359
Share	38%	6%	18%	14%	25%	100%

<sup>1</sup> Excludes commitments from AHI Facility (\$12.4 million) and from PHRD trust fund (\$9.5 million); see Annex II Tables 2 and 4b.

**Table 12**

Country-level financing needs and gaps by region							
Region	Beijing Financing Needs <sup>i</sup>	Bamako Needs Estimate 2006-2008 <sup>ii</sup>	Beijing Commitments <sup>iii</sup>	Government Contributions <sup>iv</sup>		Bamako Financing Gap	
				Scenario I	Scenario II	Scenario I	Scenario II
Sub-Saharan Africa	147.1	588.9	95.2	28.9		464.8	
East Asia & Pacific	635.2	935.2	242.3	298.4	481.0	394.5	211.9
Europe & Central Asia	224.6	247.0	155.9	43.7	62.4	47.4	28.7
Latin America & Caribbean	9.2	15.0	9.6	2.1	3.2	3.2	2.2
Middle East & North Africa	110.1	233.0	19.7	102.4	145.4	110.9	67.8
South Asia	76.0	148.7	7.7	27.7	55.8	113.3	85.2
Subtotal All Regions	1,202.3	2,167.9	530.5	503.2	776.7	<b>1,134.2</b>	<b>860.6</b>

Note: Methodology as outlined in 'Avian and Human Influenza: Financing Needs and Gaps', January 12th, 2006 - [www.worldbank.org/avianflu](http://www.worldbank.org/avianflu). <sup>i</sup> Data as presented in January 2006 at the Beijing Pledging Conference, <sup>ii</sup> Data as at October 31st 2006, <sup>iii</sup> Commitments made as at October 31st 2006, <sup>iv</sup> Government Contributions are calculated according to two scenarios representing differing financing parameters for various country categories by income level. For further details see *Avian and Human Influenza: Financing Needs and Gaps*, January 12th, 2006 - [www.worldbank.org/avianflu](http://www.worldbank.org/avianflu). The Africa government contributions are as presented in the ALive Paper *Avian Influenza Prevention and Control and Human Influenza Pandemic Preparedness in Africa: Assessment of Financing Needs and Gap*, December 2006.

**Table 13**

Confirmed pledges to the AHI Facility			
Donor	Pledge	Currency Amount	Approximate share
Australia	A \$	5,000,000	4.9%
China	US \$	2,000,000	2.7%
European Commission	Euro	46,000,000	78.2%
Iceland	US \$	200,000	0.3%
Korea	US\$	1,000,000	1.3%
Russia	US\$	3,000,000	4.0%
Slovenia	Euro	30,000	0.1%
UK	Pounds Sterling	3,500,000	8.6%
			Total 100%

## ANNEX III: ILLUSTRATIVE COUNTRY DATA ON COMMUNICATION

### *Asia Pacific*

233. **Several East Asian countries, including Cambodia, Lao PDR, Mongolia, Myanmar, Philippines and Viet Nam** held participatory workshops to form national communication task forces and to develop behaviour change strategies. They brought together multiple Government Ministries, UN Agencies, NGOs and civil society partners. Groups thought to be at high risk of experiencing avian influenza were engaged through participatory processes, and had the opportunity to inform national level communication campaigns. The UN's CREATE! strategic framework and toolbox for emergency communication, developed as part of tsunami response, became a powerful medium for sharing tools and experience both within the region and beyond. As part of the global advocacy effort to ensure the safety and protection of children, a television public service announcement was produced starring Jackie Chan, UNICEF Goodwill Ambassador, warning children of the dangers of avian influenza. The one-minute PSA has been broadcast on regional and global television networks, including CNN and Star TV in many countries in East Asia, including Cambodia, Viet Nam and Indonesia.
234. **In South Asia**, Afghanistan, Sri Lanka, Pakistan and Nepal have developed and endorsed national communication strategies. The process is advanced (but, as yet, incomplete) in Bangladesh, Bhutan, India and Maldives. Social research has been initiated in several countries to ascertain the current state of knowledge and practices. Regional communication workshops have provided an opportunity for national specialists to agree approaches to behaviour change communication, monitoring the progress of implementation, training in the use of the media, development of regional and country level inter-agency collaborations; co-production of information and mass media materials; and development of a behaviour change communication toolkit for emergencies.
235. **The strategy development process in Bangladesh is instructive.** The National Risk Communication Taskforce developed a strategic communication framework based on social research to ascertain popular knowledge, attitudes and behaviours in relation to avian and pandemic influenza. The strategy has called for media training workshops, outreach efforts to livestock producers through NGO and government networks, and an extension effort that builds on an existing network of village volunteers, mobilised to make house-to-house visits.
236. **The communication strategy in India** is based on a national communication framework being developed and endorsed by the Government in partnership with various UN systems agencies. The framework is also based on social research undertaken jointly by the Government and UNICEF in two states among backyard farmers and populations at risk of avian and human influenza. Indian authorities are developing prototype communication materials that can be adapted to the specific animal and human health communication plans of individual agencies.
237. **The national communication strategy for avian and human influenza in Pakistan** has been developed by the Ministry of Health in close cooperation with WHO, UNICEF and other UN agencies. Partnerships have been forged with media organisations and have been trained on the subject. Messages focusing on the prevention of avian influenza have been transformed into materials suitable for broadcast via television and radio. Messages will also be disseminated through posters.
238. **The national communication strategy for Cambodia** focuses on behaviour change, is based around the four messages, uses mass media and school-based programmes, and engages the Buddhist Leadership Initiative network, originally set up to communicate about HIV/AIDS. Nearly 6,000 monks, priests and imams as well as lay persons in 2,600 pagodas in 12 provinces have been mobilised as influenza advocates.
239. **The strategy for behaviour change communication in Indonesia** is based around a local adaptation of the messages describing the four priority behaviours and combines both community mobilisation at village level in high risk provinces and a national awareness-raising campaign. Communities are



themselves involved in assessments of risk and in developing prevention and preparedness plans through local government, religious and social networks. The national campaign is organised around the slogan 'Tanggap Flu Burung' or 'Take Action against Bird Flu'. The symbol is a hand with four extended fingers each of which promotes one of the four priority behaviours. **Outbreak communication work** in *Indonesia* has included the production of reliable messages about the avian influenza situation from a media centre set up in the national influenza commission, training of national journalists and editors, and direct technical assistance to the National Commission as it develops its own capacity to manage the communications effort.

240. **In Myanmar, an extensive nation-wide programme of social research was undertaken as a prelude to development of strategy.** Information was obtained on knowledge and behaviours associated with poultry rearing, slaughter and cooking practices amongst families in farming communities helped establish both the context and priorities for developing messages, devising communication materials and identifying the media most likely to result in changed behaviour. Materials were designed for use in a variety of media (print, audio, audio-visual and interpersonal communication). They were targeted to different audiences - the general public, poultry farmers and communities with backyard poultry, as well as personnel in faith-based and other non-governmental organisations and government workers.
241. **In Lao PDR, the strategy concentrated on** the development of avian and human influenza materials, identification of media and then scaling up of dissemination of the materials to all provinces. They were also aired on TV and radio and covered in news reports both on national and provincial broadcast channels. Materials were disseminated by schoolteachers who have taught children about hygiene and encouraged them to become hygiene promoters with their own toolkits for use at home. Messages directed to the poultry industry have been designed to rebuild confidence among poultry growers in the wake of avian influenza outbreaks.
242. **The communication strategy in Mongolia** was developed by a government Task Force on Emergency Risk Communication, headed by the Director of the National Centre for Communicable Disease. The focus was on both behaviour change and outbreak communications, across the nation, emphasising the importance of increased awareness and action campaigns. Target groups included health workers throughout rural communities and the wider population (accessed through mass media). Orientation of journalists – in urban and rural areas – has encouraged reliable and responsible reporting of influenza issues.
243. **The communication strategy in Sri Lanka** utilises a three-layered approach of advocacy, social mobilisation and support for behaviour change. Messages and materials were developed, and media were selected, for a range of communication interventions directed at segmented audiences.
244. **The strategic approach in Thailand** has been based on the results of participatory social research – in which communities themselves learned about the avian and human influenza issues and initiated actions that would reduce the risks they face. Members of different ethnic communities, including children, have started with the standard messages and then worked with design teams to create, produce and review a range of communication materials. These include handbooks, charts and posters: they are now being used in national campaigns. A nation-wide campaign to disseminate the materials through schools was launched in October 2006. Now some 40,000 elementary and secondary schools with over 12 million children are promoting frequent hand washing and the reporting of sick and dead poultry. A nation-wide campaign through the health ministry will promote awareness of avian influenza and its prevention in all of the country's 76 provinces.
245. **The development and implementation of Viet Nam's** communication strategy has been supervised by a Working Group for A&PI, made up of representatives of government and UN agencies. The group has sponsored social research, development of materials, national campaigns to disseminate messages and materials, the capacity building of local partners, as well as with monitoring and evaluation.

*Africa including North Africa and sub-Saharan Africa*

246. **In Egypt, a detailed communication plan was activated within hours of the report of the February 2006 outbreak.** All major state owned channels broadcast pre-prepared informational public service announcements on TV. A National Communication Committee was formed and the country was divided into ‘most’, ‘less’ and ‘least’ affected areas. A baseline survey on attitudes and practice was implemented to guide interventions. Public awareness has been enhanced through a national radio campaign comprising drama, educational spots, children songs, and Q & A talk shows, particularly directed at school children. Focused behavioural change communication has been devised to encourage changed behaviour among those keeping poultry in their backyards (and neighbouring households) in the most affected governorates. Communication materials, sensitive to the interests of these groups, have been developed for use by more than 4500 community health workers. The strategy includes communication work with staff in governorate offices, and partnership with NGOs and civil society for social mobilisation. Printed materials have been developed and distributed for a range of audiences including staff of health clinics and pharmacies; community meetings have been held with backyard poultry keepers; health messages have been disseminated through community theatre; hotlines and a website have been established; inserts have been placed in print media; journalists have been briefed; and a training video has been developed so that quarantine teams adopt consistent practices. A plan for communication with the public in the event of a pandemic is nearing completion.
247. The national communication strategy in *Cote d’Ivoire* seeks to sensitise, inform and encourage changed behaviour among vulnerable population groups such as poultry breeders, poultry handlers, consumers and health and administrative officials on avian influenza. The emphasis is on the use of interpersonal communication along with national mass media. The government has been transparent with the public by communicating the potential and immediate risks of avian and human influenza through national radio and TV broadcasts.
248. In *Guinea* where there have not been any avian influenza outbreaks, the government’s communication strategy focuses on informing the public of ways to protect poultry from avian influenza and prevent transmission of AI from birds to humans in the advent of an avian influenza outbreak. The strategy is implemented with the help of radio programmes in local languages, posters, brochures, and material placed in magazines.
249. There have been avian influenza outbreaks in *Niger*. Members of the public do not find it easy to implement the changes in behaviour requested of them. The strategy focuses on empowering people to identify and manage the risks that they face. Training materials have been developed to cover the four key messages. To facilitate communication with non-literate audiences they are rich in visual images and contain little text. They are complemented by TV and radio sketches and soap operas which are designed to inform the general public.
250. *Nigeria’s* communication strategy focuses on encouraging behaviour change: it has four main thrusts: (1) strengthening interpersonal communication by mobilising networks of traditional and religious leaders and outreach workers; (2) disseminating key messages for the wider public through the media. A wide range of materials – ranging from orientation kits for media persons, packages for school children and posters for billboards have been developed and is being used; (3) advocacy to create an enabling policy environment for AI programming and for resource mobilisation, especially at the state level; and (4) participatory action research as a community-driven process for assessing communities’ risk perception of AI and to determine possible interventions to address issues identified and prioritized. A national public enlightenment committee is providing policy guidelines and technical support, coordinating materials development as well as facilitating information sharing at all levels including at the state and local levels. Several media trainings are also being conducted and media orientation kits are being finalized. A Training of Trainers manual for avian and pandemic influenza has been developed and used with over 200 outreach workers.

251. *Tunisia*, despite no outbreaks of avian influenza, has a national communication strategy and an implementation plan developed in partnership with relevant government ministries, NGOs, media and the UN. On-going communication interventions include telephone hotlines, TV and radio spots and outreach efforts such as local events, conferences and sensitisation of teachers and young adults.
252. In *Sudan*, the government has established an Avian Influenza Coordination Committee in consultation with the UN. This focuses on animal health surveillance, human health surveillance, and social mobilisation. Nationwide communication interventions have included radio spots on prevention, identification of symptoms and reporting sick birds; public awareness messages; increased media coverage of AI and engaging faith-based organisations to promote AI preventive behaviours.
253. In *Zimbabwe*, the government has formed a National Multi-sectoral Avian Influenza Task Force to monitor and plan a response which includes a National Avian Influenza Communication Strategy. Communication materials have been developed to inform, educate and mobilise communities to adopt positive behaviours that will limit the spread of the disease. Comic books for children have also been developed.

#### *Europe and the Eastern Mediterranean*

254. In *Azerbaijan*, a draft country communication strategy, drawing together government ministries and UN and external agencies has been formulated. AI preventive messages have reached millions of people nationwide as an immediate response to the outbreak. UNICEF together with the government partners has developed and disseminated television spots, broadcast over national and district TV channels; posters for children distributed to every school and training manual for teachers.
255. *Moldova's* initial response, based on rapid communication action, focused on promptly informing the public about ways to prevent transmission. A key strategy was using school children as a channel of communication. Some half a million school-age children participated in an interactive Special Hour on Avian Influenza carried out by the government with UN support. The children learnt about the "Six Basic Rules on Prevention of Avian Influenza," and took home the messages to their families in the form of fact sheets and book marks. Further, 37,000 Teachers' Guides in Romanian and Russian were also distributed. As a next step, a large-scale media campaign is under-way, addressing the four key behavioural messages: report, separate, wash and cook. Interpersonal communication channels are widely used to reach every family in rural area and complemented by communication efforts by frontline workers, community leaders and religious leaders. Parents, families and communities have also been mobilised through various networks, public and private, particularly in rural areas.
256. In *Turkey*, communication interventions have been unfolding in phases. Phase 1 of the rapid response was based on a contingency plan developed in advance of the outbreak and focused on delivering information to as many people as possible. Print and audio-visual materials, produced by the government, were distributed and broadcast immediately after outbreaks were reported. Community leaders such as *imams* and village headmen were mobilised. School-based psycho-social packages and capacity development of school guidance counselors were undertaken. Training workshops were conducted for media persons. Phase 2 has focused on working with the government to develop a comprehensive and coherent communication strategy. The strategy delineates three stages of prevention efforts – wild birds to poultry, poultry to poultry, and poultry to human. Games on preventing AI are being used with in-school and out-of-school children. Research is being conducted to establish baseline data on knowledge, attitudes and practices pertaining to avian influenza and determining credible communication channels.

## **ANNEX IV: BELLAGIO STATEMENT AND CHECKLISTS**

### **BELLAGIO STATEMENT 25 AUGUST 2006**

#### **Preamble**

Socially and economically disadvantaged groups and individuals are almost always the worst affected by epidemics. Traditionally, they have little voice in making and implementing policy responses to health emergencies – responses which, in turn, commonly neglect the needs and interests of the disadvantaged.

Consideration for the interests of the disadvantaged is important for practical as well as ethical reasons: public health efforts are more likely to succeed in an atmosphere of social solidarity and public trust, including the trust of disadvantaged people. Avian and human pandemic influenza planning and response should therefore not only be based on sound science and public health principles, but should also respect and give particular attention to the needs and rights of the disadvantaged, and include processes through which their preferences and interests can be articulated and incorporated.

The following principles aim to help governments and intergovernmental and nongovernmental organisations take account of the interests of the disadvantaged in avian and pandemic influenza planning and response. "Checklists" of the type attached to this statement provide a ready means of ensuring that this is occurs. These principles do not exhaust all relevant technical and moral considerations but focus rather on those with the most salience for the needs and rights of disadvantaged peoples.

#### **Principles**

All people should have ready access to accurate, up-to-date and easily understood information about avian and human pandemic influenza, public policy responses, and appropriate local and individual actions. Communications should be tailored to circumvent obstacles that disadvantaged groups face in accessing such information.

Veterinary and public health strategies should foster wide engagement in planning for and responding to the avian and pandemic influenza threat. Civil society, religious groups and the private sector should be involved in helping overcome barriers to effective engagement by disadvantaged groups.

Planning and response should facilitate public involvement in surveillance and reporting of possible cases without fear of discrimination, reprisal or uncompensated loss of livelihood. Recognizing their vulnerability, special efforts are needed to foster reporting by disadvantaged groups, as well as to protect them from negative impacts which could worsen their situation.

The impact and effectiveness of interventions and policies need to be evaluated and monitored, especially with respect to prospects for providing fair benefits to, and avoiding undue burdens on, disadvantaged groups, so that corrective adjustments can be made in a timely manner.

Developing as well as developed countries should have access to the best available scientific and socio-economic data and analyses to inform avian and pandemic influenza planning and response, including information on the particular burdens and secondary harms that a pandemic and pandemic responses may inflict on disadvantaged groups.

National and international efforts are needed to promote equitable access to vaccines, antivirals and other appropriate public health and social interventions, both between and within countries, so as to provide fair and non-discriminatory treatment for traditionally disadvantaged groups as well as those who are specially disadvantaged in the context of avian and human influenza.

## Checklist for Pandemic Influenza Preparedness & Response Plans

In the development, refinement, & testing of regional, national & local pandemic influenza preparedness & response plans, governments & relevant institutions should:

	<u>Completed</u>	<u>In Process</u>	<u>Not Yet Started</u>
1. Identify and enumerate both those groups who are traditionally disadvantaged and those who are likely to be disproportionately affected by preparations for an influenza pandemic, responses to a pandemic, and by a pandemic itself.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Engage the disadvantaged groups and/or their representatives in the planning process.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Identify and address the special needs of disadvantaged groups in the context of recommendations and policies to prepare for and respond to an influenza pandemic.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Checklist for Avian Influenza  
Preparedness & Response Plans**

In the development, refinement, & testing of regional, national & local preparedness & response plans for control of highly pathogenic avian influenza in domestic birds, governments & relevant institutions should:

	<u>Completed</u>	<u>In Process</u>	<u>Not Yet Started</u>
1. Identify and enumerate both those groups who are traditionally disadvantaged and those who are likely to be disproportionately affected by measures used to control highly pathogenic avian influenza in domestic poultry.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Engage the disadvantaged groups and/or their representatives in the planning process. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Identify and address the special needs of disadvantaged groups in the context of recommendations and policies to control highly pathogenic avian influenza in domestic poultry. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Checklist for Prevention and Control of Avian Influenza  
Outbreaks in Birds  
(Short Form)**

Outbreaks of highly pathogenic avian influenza among domestic poultry and programmes for its control will have an impact not only upon household or backyard growers, but also upon small entrepreneurs (market oriented producers), contract growers, employees, low income consumers and traders and input suppliers. Some of these groups are already economically and socially disadvantaged and others will be disproportionately affected in ways that make them vulnerable to economic and social disadvantage. Items in the checklist should be applied as appropriate to each of these groups.

**Avian Control Measure(s):** \_\_\_\_\_

**Disadvantaged Group Affected:** \_\_\_\_\_

	<b><u>Yes</u></b>	<b><u>No</u></b>
1. Is (are) the control measure (s):		
• Compulsory? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Efficacious? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Able to be implemented by the group? .....	<input type="checkbox"/>	<input type="checkbox"/>
2. Is the effectiveness of the avian control measure(s) being assessed? .....	<input type="checkbox"/>	<input type="checkbox"/>
3. Is the group suffering:		
• Loss of income? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Loss of assets? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Loss of income/assets for women? .....	<input type="checkbox"/>	<input type="checkbox"/>
4. Are individuals/families within the group receiving compensation? .....	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the group needing to find another way to make a living? .....	<input type="checkbox"/>	<input type="checkbox"/>
• If yes, is the group receiving adequate and timely support (materials, finances, training, information) for development of alternative livelihoods? .....	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the group have access to accurate, prompt and credible information in the local language? .....	<input type="checkbox"/>	<input type="checkbox"/>
6. Do the actions to be undertaken avoid singling out some communities or individuals unfairly? .....	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the group being protected from stigma, retaliation, or loss of social respect? .....	<input type="checkbox"/>	<input type="checkbox"/>
8. Are individuals able to report information to authorities in a manner that prevents or minimizes stigma & other negative social responses? .....	<input type="checkbox"/>	<input type="checkbox"/>
9. Are measures in place to protect the group, including and especially children, from food insecurity? .....	<input type="checkbox"/>	<input type="checkbox"/>
10. Are the proposed containment measures the least burdensome ones that can be employed to obtain the desired effect? .....	<input type="checkbox"/>	<input type="checkbox"/>
11. Are measures in place to safeguard cultural independence, way of life, & self-determination for the group? .....	<input type="checkbox"/>	<input type="checkbox"/>

**Checklist for Prevention and Control of Avian Influenza  
Outbreaks in Birds  
(Long Form)**

Outbreaks of highly pathogenic avian influenza among domestic poultry and programmes for its control will have an impact not only upon household or backyard growers, but also upon small entrepreneurs (market oriented producers), contract growers, employees, low income consumers and traders and input suppliers. Some of these groups are already economically and socially disadvantaged and others will be disproportionately affected in ways that make them vulnerable to economic and social disadvantage. Items in the checklist should be applied as appropriate to each of these groups.

**Avian Control Measure(s):** \_\_\_\_\_

**Disadvantaged Group Affected:** \_\_\_\_\_

	<u>Yes</u>	<u>No</u>
1. Is (are) the control measure(s):		
• Compulsory? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Efficacious? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Able to be implemented by the group? .....	<input type="checkbox"/>	<input type="checkbox"/>
2. Is the effectiveness of the avian control measure(s) being assessed? .....	<input type="checkbox"/>	<input type="checkbox"/>
3. Is the group suffering:		
• Loss of income? .....	<input type="checkbox"/>	<input type="checkbox"/>
If yes, specify:   Number of persons or households affected: _____		
Range of income loss: _____		
• Loss of assets? .....	<input type="checkbox"/>	<input type="checkbox"/>
If yes, specify:   Number of persons or households affected: _____		
Range of asset loss: _____		
• Loss of income/assets for women? .....	<input type="checkbox"/>	<input type="checkbox"/>
If yes, specify:   Number of women affected: _____		
Range of loss: _____		
4. Are individuals/families within the group receiving compensation? .....	<input type="checkbox"/>	<input type="checkbox"/>
If yes, specify:   Amount of compensation: _____		
If no, is compensation anticipated? .....	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the group needing to find another way to make a living? .....	<input type="checkbox"/>	<input type="checkbox"/>
• If yes, is the group receiving adequate and timely support (materials, finances, training, information) for development of alternative livelihoods? .....	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the group have access to accurate, prompt and credible information in the local language? .....	<input type="checkbox"/>	<input type="checkbox"/>
6. Do the actions to be undertaken avoid singling out some communities or individuals unfairly? .....	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the group being protected from stigma, retaliation, or loss of social respect? .....	<input type="checkbox"/>	<input type="checkbox"/>
8. Are individuals able to report information to authorities in a manner that prevents or minimizes stigma and other negative social responses? .....	<input type="checkbox"/>	<input type="checkbox"/>
9. Are measures in place to protect the group, including and especially children, from food insecurity? .....	<input type="checkbox"/>	<input type="checkbox"/>
10. Are the proposed containment measures the least burdensome ones that can be employed to obtain the desired effect? .....	<input type="checkbox"/>	<input type="checkbox"/>
11. Are measures in place to safeguard cultural independence, way of life, and self-determination for the group? .....	<input type="checkbox"/>	<input type="checkbox"/>



## Checklist for Rapid Response & Containment of Avian Influenza in Humans

This checklist is intended as an addendum to the WHO Pandemic Influenza Draft Protocol for Rapid Response & Containment. In this context, any community in which a containment strategy is implemented should be considered disadvantaged. Some communities, or some groups within affected communities, may be economically or socially disadvantaged prior to a suspected outbreak and thus may be even more vulnerable to the burdens and secondary harms of containment efforts.

	<u>Yes</u>	<u>No</u>
1. Based on the current situation & prior to initiation of any containment activities, has an action plan for rapid response/containment in this particular context been developed?.....	<input type="checkbox"/>	<input type="checkbox"/>
2. Have the community and/or its leaders been consulted?.....	<input type="checkbox"/>	<input type="checkbox"/>
3. Are there under-represented groups who have not participated in community discussions? .....	<input type="checkbox"/>	<input type="checkbox"/>
• If yes, have provisions been made to engage with these under-represented groups?.....	<input type="checkbox"/>	<input type="checkbox"/>
4. Have the burdens & secondary harms of the action plan been identified?.....	<input type="checkbox"/>	<input type="checkbox"/>
• If yes, have strategies been developed to prevent or mitigate these burdens & secondary harms?.....	<input type="checkbox"/>	<input type="checkbox"/>
5. Do the actions to be undertaken avoid singling out some communities or individuals unfairly?.....	<input type="checkbox"/>	<input type="checkbox"/>
6. Are measures in place to safeguard the privacy of individuals being tested for suspected infection with avian influenza? .....	<input type="checkbox"/>	<input type="checkbox"/>
7. Will all isolated or quarantined individuals be receiving:		
• Food? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Water?.....	<input type="checkbox"/>	<input type="checkbox"/>
• Access to communication with loved ones? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Access to timely information? .....	<input type="checkbox"/>	<input type="checkbox"/>
• Social and emotional support services? .....	<input type="checkbox"/>	<input type="checkbox"/>
8. Is information being provided to the community that is timely, accurate, accessible, & readily understood (non-technical, & in the local language)?.....	<input type="checkbox"/>	<input type="checkbox"/>
9. Are individuals able to report information to authorities in a manner that prevents or minimizes stigma & other negative social responses?.....	<input type="checkbox"/>	<input type="checkbox"/>
10. Are affected individuals or groups being protected from stigma, retaliation, or loss of social respect? .....	<input type="checkbox"/>	<input type="checkbox"/>
11. Are medical countermeasures being used equitably & without prejudice?.....	<input type="checkbox"/>	<input type="checkbox"/>
12. Are the proposed containment measures the least restrictive ones that can be employed to obtain the desired effect? .....	<input type="checkbox"/>	<input type="checkbox"/>
(For example, if the same effect can be achieved, it is preferable to isolate infected individuals rather than to impose voluntary or forced quarantine on their contacts.)		

## **ANNEX V: OCTOBER – NOVEMBER INFORMATION – GATHERING EXERCISE**

### **A. Quick Questions on Institutional Arrangements**

Q2a Is there a national AHI task force or equivalent?

Yes

No

Do not know

Q2b If yes, what has been the number of meetings over the last six months?

Q3a Is there a central coordinating body (a ministry or agency) with responsibility for AHI response and preparedness across the whole government?

Yes

No

Do not know

Q3b If yes please specify:

Q4a Has the government engaged national NGOs, civil society and the private sector in its planning?

Yes

No

Do not know

Q4b If yes, which ones?

Civil Society

National NGOs

Private Sector

Others

Q4c If any other sectors have been actively assisting the country, please specify:

Q5a Which bilateral and multilateral agencies are presently active in assisting the country on avian and human pandemic influenza?

None

FAO

OCHA

UNICEF

UNEP

WHO

IOM

OIE

UNDP

WFP

World Bank

Bilateral agencies

Q5b If any other agency, please specify:

Q5c Which bilateral agencies are presently active in assisting the country on avian and human pandemic influenza?

Q6 How many joint AHI programmes are there between host government and multi-lateral and bi-lateral agencies?

Q7 Are regular meetings convened and attended by all stakeholders in order to improve harmonised and aligned interventions and to prevent duplication of effort?

Yes

No

Do not know

## **B. Questions on Planning and Preparedness**

Q8 What is the current status of integrated country Avian and Human Influenza plans?

Non-existent

In process

Endorsed by Government

Q9a Have integrated country plans been tested in simulation exercises when no AI outbreak has occurred?

Yes

No

Do not know

Q9b If yes, please specify number of national simulation exercises since June 2006:

Q10 Since June 2006, which multilateral donor agencies have assessed or appraised integrated country plans for avian influenza in animals and for a human pandemic influenza? Please indicate the number of unilateral and joint missions and whether the assessments were for avian influenza, human pandemic influenza or both.

Q11 Please indicate which bilateral donor agencies have since June 2006 assessed or appraised integrated country plans for avian influenza and for human pandemic influenza, and the number of unilateral and joint missions for each

## **C. Questions on Surveillance and Infectious Disease Control in Animals**

Q12a Does the country have the expert veterinary capacity to detect and confirm HPAI infection in animals?

Yes

No

Do not know

Q12b Please indicate the number of vets trained since June 2006 in HPAI detection:

Q12c Please indicate the number of village vet workers trained since June 2006 in HPAI detection:

Q12d The number of poultry in the country:

Q13 What criteria are used to identify suspicion of HPAI in this country?

Q14a Does the country have expert epidemiology capacity to trace the HPAI infections in animals?

- Yes
- No
- Do not know

Q14b Comment on the country's epidemiological capacity to trace HPAI infection in animals:

Q15a Does the country have laboratory facilities with HPAI diagnostic capacity?

- Yes
- No
- Do not know

Q15b If there is no such laboratory, does the national authority have an agreement with an OIE/FAO reference laboratory?

- Yes
- No
- Do not know

Q15c Please indicate the number of laboratories:

Q15d The number of tested AI samples:

Q16a Are there programmes in place to strengthen capacity for HPAI surveillance and outbreak reporting in birds?

- Yes
- No
- Do not know

Q16b Comment on programmes in place to strengthen capacity for HPAI surveillance and outbreak reporting in birds:

Q17a Are there any schemes in place for "compensating" farmers for poultry culling in this country?

- Yes
- No
- Do not know

Q17b Who is eligible to be "compensated"?

- Farmer
- Head of household
- Any member of household
- Others

Q17c The amount "compensated" is what percentage of market value?

- Less than 30%
- 30-50%
- 50-70%
- More than 70%

Q17d Is the "compensation" rate the same across the country?

Yes

No

Do not know

Q17e When was the "compensation" scheme established (MM.YYYY)?

Q17f How much has the scheme cost the government since 2003? (US\$)

Q17g What proportion of funds were derived from government (central and provincial)?

Q17h What proportion of funds were derived from private sector?

Q18a Where HPAI has occurred, what is the average time between the observation of the HPAI outbreak and reporting to national agencies? (in days)

Q18b Where HPAI has occurred, what is the average time between the observation of the HPAI outbreak and reporting to international agencies? (in days)

Q19 Are specific HPAI controls on cross-border trade and movement planned or currently being implemented?

Planned

Implemented

Neither planned nor implemented

Q20 Are HPAI controls on contact between different species of birds and other animals planned or currently being implemented?

Planned

Implemented

Neither planned nor implemented

Q21 Is selective or comprehensive poultry HPAI vaccination planned or currently being implemented?

Planned

Implemented

Neither planned nor implemented

#### **D. Questions on Surveillance and Infectious Disease Control in Humans**

Q22 Does the country have the diagnostic capacity to detect and confirm AHI infection in humans?

Yes

No

Do not know

Q22a Number of clinical staff in public sector trained since June 2006 in AHI detection :

Q22b Number of village health workers in public sector trained since June 2006 in AHI detection

Q22c Number of clinical staff in private sector trained since June 2006 in AHI detection :

Q22d Number of village health workers in private sector trained since June 2006 in AHI detection :

Q23a Are there programmes in place to strengthen capacity for AI surveillance and case reporting in humans?

Yes

No

Do not know

Q23b Comment on programmes in place to strengthen capacity for AI surveillance and case reporting in humans

Q24a Where AI has occurred in people, what is the average time between case onset and reporting to national agencies?

Q24b Where AI has occurred in people, what is the average time between case onset and reporting to international agencies?

Q25a Is the use of personal protective equipment being planned or implemented for the control of AI in people at present?

Planned

Implemented

Neither planned nor implemented

Q25b Number of PPE kits available to the national authorities:

Q26a Is the tracing of contacts planned or being implemented for control of AI in people at present?

Planned

Implemented

Neither planned nor implemented

Q26b Number of contacts traced per case :

Q27a Has clinical guidance been issued for training in the management of AI cases in people?

Yes

No

Do not know

Q27b Number of health workers trained in AI management

Q28a Does the integrated country plan (or any official declaration since the plan was issued) include provisions to purchase pandemic influenza vaccine for selective or comprehensive population pandemic influenza vaccination?

Yes

No

Do not know

Q28b Does the integrated country plan (or any official declaration since the plan was issued) include provisions to produce pandemic influenza vaccine for selective or comprehensive population pandemic influenza vaccination ?

Yes

No

Do not know

Q29a Does the integrated country plan include a strategy to acquire anti-virals for national use?

Yes

No

Do not know

Q29b Intended size of anti-viral stockpile (number of treatment courses of a specified anti-viral):

### **E. Questions about Communications**

Q30a Has there been a mass AHI communication campaign?

Yes

No

Do not know

Q30b Has the campaign raised awareness and or contributed to any changes in public behaviour?

Yes

No

Do not know

Q30c Comment on possible reasons if the campaign did not succeed :

Q31a Are there standard procedures for communication among different agencies, the government & hospitals?

Yes

No

Do not know

Q31b Comment on standard procedures for communication among different agencies, the government & hospitals :

Q32a Are there established mechanisms for the government to share information rapidly with the WHO/FAO/OIE?

Yes

No

Do not know

Q32b Comment on established mechanisms for the government to share information rapidly with the WHO/FAO/OIE

Q33 Are there established procedures for communicating health messages to raise awareness and change public behaviour?

Yes

No

Do not know

## **F. Constraints**

Q34 What are the main constraints on country AHI preparedness planning and plan implementation?

G. Sources and related information

Q35 Have there been any studies of the socio-economic impact of HPAI in the country?

Yes

No

Do not know

Q36 Which organisations have assisted with responses to this set of questions?

Q37 Please list any formal official information sources (for example databases, reports or publications) you have used in answering these questions.

Q38 Please specify any errors in the country information profile (attached in the accompanying e-mail) which is based on the first survey completed in June. In this response, please do not include developments since June 2006



## ANNEX VI: TABLES ON PLEDGES, COMMITMENTS AND DISBURSEMENTS

Annex Table 1: Commitments and Disbursements Summary by Donor																
AHI Pledge Results as of October 31, 2006 -- As Reported by Donors																
Donor	Beijing Pledges	Bamako Increased	Cumulative Pledges	Countries		Regional		International Organizations		AHI Facility		Other		Unallocated	Total	
				Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements		Commitments	Disbursements
Australia	55.91	55.09	111.00	24.83	8.02	30.56	6.04	2.06	2.06	3.82	3.82	0.00	0.00	49.73	61.27	19.94
Austria	1.24		1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24	0.00	0.00
Belgium	3.11		3.11	0.00	0.00	0.25	0.25	2.74	2.61	0.00	0.00	0.00	0.00	0.12	2.99	2.86
Canada	0.00	87.05	87.05	6.77	5.78	0.00	0.00	14.38	0.74	0.00	0.00	12.79	0.25	53.11	33.94	6.77
China	10.00		10.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	0.00	7.00	3.00	1.00
Cyprus	0.03		0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Czech Republic	0.20		0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20
Estonia	0.04		0.04	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.04	0.01
Finland	3.36	6.59	9.95	8.08	8.08	0.00	0.00	1.87	1.87	0.00	0.00	0.00	0.00	0.00	9.95	9.95
France	31.09	9.95	41.04	3.73	1.24	0.64	0.64	17.65	13.10	0.00	0.00	11.44	2.49	7.58	33.46	17.47
Germany	28.61	22.46	51.06	16.36	0.19	0.00	0.00	0.21	0.00	0.00	0.00	34.50	2.15	0.00	51.06	2.33
Greece	0.75		0.75	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.00	0.37	0.38	0.38
Hungary	0.04		0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Iceland	0.40		0.40	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.40	0.00
Ireland	1.24		1.24	0.24	0.12	0.00	0.00	0.62	0.62	0.00	0.00	0.00	0.00	0.38	0.86	0.74
Italy	6.96		6.96	0.00	0.00	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	2.46	4.50	0.00
Japan	155.00	67.00	222.00	8.81	0.73	56.85	56.85	71.13	70.41	0.00	0.00	48.98	48.98	36.23	185.77	176.97
Korea, Republic of	5.71		5.71	2.59	2.59	0.00	0.00	0.48	0.32	1.00	0.00	0.00	0.00	1.64	4.07	2.91
Luxembourg	1.24	0.25	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.00	0.00
Netherlands	13.68	6.97	20.64	3.96	2.55	0.00	0.00	4.24	0.96	0.00	0.00	7.08	0.99	5.36	15.28	4.50
Norway	7.90	3.40	11.30	0.00	0.00	0.00	0.00	10.45	10.45	0.00	0.00	0.00	0.00	0.85	10.45	10.45
Russia	23.70	8.16	31.86	4.86	0.00	0.00	0.00	0.00	0.00	3.00	1.00	24.00	8.90	0.00	31.86	9.90
Saudi Arabia	1.00		1.00	0.00	0.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	1.00	1.00
Singapore	0.60		0.60	0.60	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.31
Slovenia	0.04		0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.04	0.00
Spain	2.98	0.58	3.56	0.00	0.00	0.00	0.00	3.56	2.98	0.00	0.00	0.00	0.00	0.00	3.56	2.98
Sweden	9.37	3.35	12.72	0.00	0.00	0.00	0.00	12.72	12.58	0.00	0.00	0.00	0.00	0.00	12.72	12.58
Switzerland	4.76	1.03	5.79	0.40	0.40	0.00	0.00	5.39	4.34	0.00	0.00	0.00	0.00	0.00	5.79	4.74
Thailand	2.50		2.50	0.00	0.00	2.50	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	1.59
United Kingdom	36.36	18.18	54.55	0.00	0.00	0.00	0.00	21.60	8.50	6.60	6.60	11.47	7.75	14.88	39.67	22.85
United States	334.00	100.00	434.00	138.08	127.32	64.49	61.74	44.51	41.14	0.00	0.00	130.21	93.64	56.86	377.30	323.84
European Commission	124.36	83.33	207.69	47.82	15.36	38.10	0.00	0.00	0.00	58.42	29.21	41.02	18.42	22.33	185.36	62.99
African Development Bank	0.00	15.00	15.00	5.50	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.50	5.50	3.00
Asian Development Bank	468.00		468.00	40.90	3.63	0.34	0.90	18.97	10.99	0.00	0.00	18.74	0.18	389.05	78.95	15.70
World Bank	500.50		500.50	195.10	24.29	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	304.40	196.10	24.29
<b>GRAND TOTAL</b>	<b>1,834.67</b>	<b>488.39</b>	<b>2,323.07</b>	<b>508.84</b>	<b>203.82</b>	<b>194.23</b>	<b>128.50</b>	<b>240.19</b>	<b>185.55</b>	<b>75.11</b>	<b>40.63</b>	<b>340.23</b>	<b>183.74</b>	<b>964.63</b>	<b>1,358.60</b>	<b>742.25</b>
<b>Total Committed (USD million)</b>				<b>1,358.60</b>												
<b>Total Disbursed (USD million)</b>				<b>742.25</b>												

**Annex Table 2: Details by Recipient Country**  
**AHI Pledge Results as of October 31, 2006 -- As Reported by Donors**

Region	Recipient Country	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
SAR	Afghanistan	US	0.00	1.13	0.00	0.00	1.13	0.00	1.13	1.13
		<b>Total</b>	0.00	1.13	0.00	0.00	1.13	0.00		
ECA	Albania	US	0.00	0.82	0.00	0.00	0.82	0.00	6.30	0.50
		World Bank	0.00	0.00	5.00	0.00	0.00	0.00		
		PHRD	0.00	0.80	0.00	0.00	0.00	0.00		
		<b>Total</b>	0.50	0.80	5.00	0.50	0.00	0.00		
AFR	Angola	US	0.00	0.82	0.00	0.00	0.82	0.00	0.82	0.82
		<b>Total</b>	0.00	0.82	0.00	0.00	0.82	0.00		
LCR	Argentina	US	0.00	0.90	0.00	0.00	0.90	0.00	0.90	0.90
ECA	Armenia	Russia	0.54	0.00	0.00	0.00	0.00	0.00	10.53	3.36
		US	2.56	0.38	0.00	2.56	0.38	0.00		
		World Bank	0.00	0.00	6.25	0.00	0.00	0.30		
		PHRD	0.00	0.80	0.00	0.00	0.13	0.00		
		<b>Total</b>	3.10	1.18	6.25	2.56	0.51	0.30		
ECA	Azerbaijan	ADB	0.00	0.00	0.00	0.00	0.00	0.05	6.44	0.80
		Russia	0.54	0.00	0.00	0.00	0.00	0.00		
		US	0.75	0.00	0.00	0.75	0.00	0.00		
		World Bank	0.00	0.00	5.15	0.00	0.00	0.00		
		<b>Total</b>	1.29	0.00	5.15	0.75	0.00	0.05		
SAR	Bangladesh	US	0.52	1.93	0.00	0.52	1.93	0.00	2.44	2.44
		<b>Total</b>	0.52	1.93	0.00	0.52	1.93	0.00		
ECA	Belarus	Russia	0.54	0.00	0.00	0.00	0.00	0.00	0.54	0.00
AFR	Benin	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	0.50	0.38
		<b>Total</b>	0.00	0.50	0.00	0.00	0.38	0.00		
LCR	Bolivia	US	0.32	0.00	0.00	0.32	0.00	0.00	0.32	0.32
ECA	Bosnia	US	0.20	0.00	0.00	0.20	0.00	0.00	0.20	0.20
		<b>Total</b>	0.20	0.00	0.00	0.20	0.00	0.00		
LCR	Brazil	US	0.00	0.90	0.00	0.00	0.90	0.00	0.90	0.90
		<b>Total</b>	0.00	0.90	0.00	0.00	0.90	0.00		
ECA	Bulgaria	US	0.89	0.00	0.00	0.89	0.00	0.00	0.89	0.89
		<b>Total</b>	0.89	0.00	0.00	0.89	0.00	0.00		
AFR	Burkina Faso	US	0.20	0.00	0.00	0.20	0.00	0.00	0.70	0.58
		AfDB	0.00	0.50	0.00	0.00	0.38	0.00		
		<b>Total</b>	0.20	0.50	0.00	0.20	0.38	0.00		
EAP	Cambodia	Australia	0.00	1.45	0.00	0.00	1.45	0.00	27.36	12.56
		France	0.00	1.24	0.00	0.00	0.62	0.00		
		Germany	0.00	3.11	0.00	0.00	0.00	0.00		
		US	6.11	3.45	0.00	5.90	3.45	0.00		
		ADB	0.00	0.00	9.00	0.00	0.00	1.14		
		PHRD	0.00	3.00	0.00	0.00	0.00	0.00		
		<b>Total</b>	6.11	12.25	9.00	5.90	5.52	1.14		
AFR	Cameroon	US	0.20	0.00	0.00	0.20	0.00	0.00	0.70	0.58
		AfDB	0.00	0.50	0.00	0.00	0.38	0.00		
		<b>Total</b>	0.20	0.50	0.00	0.20	0.38	0.00		
AFR	Chad	European Commission	0.00	5.08	0.00	0.00	2.54	0.00	5.58	2.92
		AfDB	0.00	0.50	0.00	0.00	0.38	0.00		
		<b>Total</b>	0.00	5.58	0.00	0.00	2.92	0.00		
EAP	China	Australia	0.00	0.38	0.00	0.00	0.38	0.00	11.21	7.63
		Netherlands	0.00	0.04	0.00	0.00	0.04	0.00		
		US	1.67	6.47	0.00	0.93	6.28	0.00		
		AHIF	0.00	2.65	0.00	0.00	0.00	0.00		
		<b>Total</b>	1.67	9.54	0.00	0.93	6.70	0.00		
AFR	Congo (DRC)	US	0.12	1.01	0.00	0.12	1.01	0.00	1.13	1.13
		<b>Total</b>	0.12	1.01	0.00	0.12	1.01	0.00		
AFR	Congo (ROC)	US	0.00	0.15	0.00	0.00	0.15	0.00	0.15	0.15
		<b>Total</b>	0.00	0.15	0.00	0.00	0.15	0.00		
AFR	Cote D'Ivoire	US	0.07	0.40	0.00	0.00	0.40	0.00	0.97	0.40
		AfDB	0.00	0.50	0.00	0.00	0.00	0.00		
	<b>Total</b>		0.07	0.90	0.00	0.00	0.40	0.00		

a/ In Kind may include technical assistance, supplies, equipments, commodities, workshops, training etc.

b/ All bilateral commitments and disbursements are in the form of Grants whereas ADB and WB amounts are Loans and Credits.

c/ ADB and WB amounts mainly include Loans and Credits.

d/ AHIF is a multidonor trust fund facility supervised by the World Bank. PHRD is primarily a Japanese trust fund supervised by the WB. Both facilities allocate resources for Avian and Human Influenza and they are not included in direct World Bank contributions

**Total Committed excluding AHIF and PHRD (USD mil): 508.68**

**Total Disbursed excluding AHIF and PHRD (USD mil): 203.83**

AHIF Committed (USD mil): 12.35

PHRD Committed (USD mil): 9.50

AHIF Disbursed (USD mil): 2.30

PHRD Disbursed (USD mil): 0.28

**Annex Table 2: Details by Recipient Country**  
**AHI Pledge Results as of October 31, 2006 -- As Reported by Donors**

Region	Recipient Country	Donor	Committed			Disbursed			Total Commit.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
ECA	Cyprus	US	0.50	0.00	0.00	0.50	0.00	0.00	0.50	0.50
		<b>Total</b>	0.50	0.00	0.00	0.50	0.00	0.00		
AFR	Djibouti	US	0.10	0.00	0.00	0.10	0.00	0.00	2.20	0.10
		<b>Total</b>	0.10	2.10	0.00	0.10	0.00	0.00		
EAP	East Timor	US	0.38	0.00	0.00	0.38	0.00	0.00	0.38	0.38
		<b>Total</b>	0.38	0.00	0.00	0.38	0.00	0.00		
MNA	Egypt	US	0.63	0.00	0.00	0.56	0.00	0.00	0.63	0.56
		<b>Total</b>	0.63	0.00	0.00	0.56	0.00	0.00		
AFR	Ethiopia	US	1.63	0.40	0.00	1.55	0.40	0.00	2.15	1.95
		<b>Total</b>	1.63	0.52	0.00	1.55	0.40	0.00		
ECA	Georgia	US	0.81	0.38	0.00	0.81	0.38	0.00	11.19	1.89
		<b>Total</b>	0.81	3.38	7.00	0.81	0.38	0.70		
AFR	Ghana	US	0.30	0.00	0.00	0.30	0.00	0.00	4.36	2.46
		<b>Total</b>	0.30	4.06	0.00	0.30	2.16	0.00		
ECA	Greenland	US	0.09	0.00	0.00	0.00	0.00	0.00	0.09	0.00
		<b>Total</b>	0.09	0.00	0.00	0.00	0.00	0.00		
LCR	Haiti	US	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.10
		<b>Total</b>	0.10	0.00	0.00	0.10	0.00	0.00		
SAR	India	US	0.53	1.97	0.00	0.53	1.97	0.00	2.50	2.50
		<b>Total</b>	0.53	1.97	0.00	0.53	1.97	0.00		
EAP	Indonesia	Australia	0.00	11.84	0.00	0.00	4.13	0.00	67.03	30.72
		<b>Total</b>	18.15	48.48	0.40	14.36	16.31	0.05		
MNA	Iraq	US	0.41	0.48	0.00	0.00	0.48	0.00	1.75	1.34
		<b>Total</b>	1.27	0.48	0.00	0.86	0.48	0.00		
LCR	Jamaica	US	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.00
		<b>Total</b>	0.03	0.00	0.00	0.00	0.00	0.00		
MNA	Jordan	US	0.03	0.00	0.00	0.02	0.00	0.00	0.03	0.02
		<b>Total</b>	0.03	0.00	0.00	0.02	0.00	0.00		
ECA	Kazakhstan	Russia	0.54	0.00	0.00	0.00	0.00	0.00	1.24	0.70
		<b>Total</b>	0.99	0.25	0.00	0.45	0.25	0.00		
AFR	Kenya	US	1.07	5.03	0.00	1.00	4.03	0.00	6.10	5.02
		<b>Total</b>	1.07	5.03	0.00	1.00	4.03	0.00		
EAP	Korea, DPR	Australia	0.00	0.38	0.00	0.00	0.38	0.00	1.65	1.65
		<b>Total</b>	1.27	0.38	0.00	1.27	0.38	0.00		
EAP	Korea, ROK	US	0.00	0.33	0.00	0.00	0.33	0.00	0.33	0.33
		<b>Total</b>	0.00	0.33	0.00	0.00	0.33	0.00		
ECA	Kyrgyzstan	Russia	0.54	0.00	0.00	0.00	0.00	0.00	5.64	0.55
		<b>Total</b>	0.64	1.00	4.00	0.10	0.15	0.30		
EAP	Lao PDR	France	0.00	2.49	0.00	0.00	0.62	0.00	27.29	9.23
		<b>Total</b>	4.70	12.59	10.00	4.45	3.61	1.16		

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Total Committed excluding AHIF and PHRD (USD mil): 508.68

Total Disbursed excluding AHIF and PHRD (USD mil): 203.83

AHIF Committed (USD mil): 12.35

PHRD Committed (USD mil): 9.50

AHIF Disbursed (USD mil): 2.30

PHRD Disbursed (USD mil): 0.28

**Annex Table 2: Details by Recipient Country**  
**AHIF Pledge Results as of October 31, 2006 -- As Reported by Donors**

Region	Recipient Country	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
		Ireland	0.00	0.12	0.00	0.00	0.12	0.00		
AFR	<b>Lesotho</b>	<b>Total</b>	0.00	0.12	0.00	0.00	0.12	0.00	0.12	0.12
		US	0.00	1.00	0.00	0.00	0.00	0.00		
MNA	<b>Libya</b>	<b>Total</b>	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
		US	0.20	0.00	0.00	0.20	0.00	0.00		
ECA	<b>Macedonia, FYR</b>	<b>Total</b>	0.20	0.00	0.00	0.20	0.00	0.00	0.20	0.20
		US	0.15	0.00	0.00	0.15	0.00	0.00		
AFR	<b>Malawi</b>	<b>Total</b>	0.15	0.00	0.00	0.15	0.00	0.00	0.15	0.15
		US	0.00	0.96	0.00	0.00	0.96	0.00		
		ADB	0.00	0.00	0.40	0.00	0.00	0.05		
EAP	<b>Malaysia</b>	<b>Total</b>	0.00	0.96	0.40	0.00	0.96	0.05	1.36	1.01
		European Commission	0.00	2.54	0.00	0.00	1.28	0.00		
		US	0.25	0.00	0.00	0.15	0.00	0.00		
		AfDB	0.00	0.50	0.00	0.00	0.00	0.00		
AFR	<b>Mali</b>	<b>Total</b>	0.25	3.04	0.00	0.15	1.28	0.00	3.29	1.43
		US	0.37	6.08	0.00	0.00	6.08	0.00		
LCR	<b>Mexico</b>	<b>Total</b>	0.37	6.08	0.00	0.00	6.08	0.00	6.45	6.08
		Russia	0.54	0.00	0.00	0.00	0.00	0.00		
		US	0.86	0.00	0.00	0.86	0.00	0.00		
		World Bank	0.00	0.00	8.00	0.00	0.00	0.50		
		PHRD	0.00	0.50	0.00	0.00	0.00	0.00		
ECA	<b>Moldova</b>	<b>Total</b>	1.40	0.50	8.00	0.86	0.00	0.50	9.90	1.36
		US	0.44	1.10	0.00	0.44	1.10	0.00		
		Korea, Republic of	0.00	0.00	0.00	0.00	0.00	0.00		
EAP	<b>Mongolia</b>	<b>Total</b>	0.44	1.10	0.00	0.44	1.10	0.00	1.54	1.54
		US	0.00	0.63	0.00	0.00	0.63	0.00		
MNA	<b>Morocco</b>	<b>Total</b>	0.00	0.63	0.00	0.00	0.63	0.00	0.63	0.63
		US	0.68	0.00	0.00	0.68	0.00	0.00		
AFR	<b>Mozambique</b>	<b>Total</b>	0.68	0.00	0.00	0.68	0.00	0.00	0.68	0.68
		Australia	0.00	0.76	0.00	0.00	0.76	0.00		
		US	0.16	0.00	0.00	0.00	0.00	0.00		
EAP	<b>Myanmar</b>	<b>Total</b>	0.16	0.76	0.00	0.00	0.76	0.00	0.92	0.76
		US	0.32	0.00	0.00	0.32	0.00	0.00		
SAR	<b>Nepal</b>	<b>Total</b>	0.32	0.00	0.00	0.32	0.00	0.00	0.32	0.32
		US	0.20	0.00	0.00	0.20	0.00	0.00		
		AfDB	0.00	0.50	0.00	0.00	0.38	0.00		
AFR	<b>Niger</b>	<b>Total</b>	0.20	0.50	0.00	0.20	0.38	0.00	0.70	0.58
		Korea, Republic of	0.20	0.00	0.00	0.20	0.00	0.00		
		Japan	0.00	0.73	0.00	0.00	0.73	0.00		
		US	1.60	0.76	0.00	1.52	0.76	0.00		
		World Bank	0.00	0.00	50.00	0.00	0.00	20.00		
		European Commission	0.00	5.08	0.00	0.00	2.54	0.00		
		AfDB	0.00	0.50	0.00	0.00	0.38	0.00		
AFR	<b>Nigeria</b>	<b>Total</b>	1.80	7.07	50.00	1.72	4.41	20.00	58.87	26.13
		US	0.13	0.83	0.00	0.00	0.83	0.00		
SAR	<b>Pakistan</b>	<b>Total</b>	0.13	0.83	0.00	0.00	0.83	0.00	0.96	0.83
		US	0.10	0.00	0.00	0.00	0.00	0.00		
LCR	<b>Panama</b>	<b>Total</b>	0.10	0.00	0.00	0.00	0.00	0.00	0.10	0.00
		Australia	0.00	4.66	0.00	0.00	0.00	0.00		
EAP	<b>Papua New Guinea</b>	<b>Total</b>	0.00	4.66	0.00	0.00	0.00	0.00	4.66	0.00
		US	0.02	0.00	0.00	0.01	0.00	0.00		
LCR	<b>Paraguay</b>	<b>Total</b>	0.02	0.00	0.00	0.01	0.00	0.00	0.02	0.01
		US	0.00	0.83	0.00	0.00	0.83	0.00		
LCR	<b>Peru</b>	<b>Total</b>	0.00	0.83	0.00	0.00	0.83	0.00	0.83	0.83
		US	0.68	0.93	0.00	0.68	0.93	0.00		
		ADB	0.00	0.00	0.40	0.00	0.00	0.05		
EAP	<b>Philippines</b>	<b>Total</b>	0.68	0.93	0.40	0.68	0.93	0.05	2.01	1.66
		European Commission	0.00	0.64	0.00	0.00	0.64	0.00		
		Germany	0.00	0.19	0.00	0.00	0.19	0.00		
		US	2.43	0.63	0.00	2.40	0.63	0.00		
		World Bank	0.00	0.00	37.70	0.00	0.00	0.00		
ECA	<b>Romania</b>	<b>Total</b>	2.43	1.45	37.70	2.40	1.45	0.00	41.58	3.85
		US	1.09	0.90	0.00	1.00	0.45	0.00		
ECA	<b>Russia</b>	<b>Total</b>	1.09	0.90	0.00	1.00	0.45	0.00	1.99	1.45

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PHRD Disbursed (USD mil): 0.28

**Annex Table 2: Details by Recipient Country**  
**AHI Pledge Results as of October 31, 2006 -- As Reported by Donors**

Region	Recipient Country	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
AFR	Rwanda	US	0.10	0.40	0.00	0.10	0.40	0.00	0.50	0.50
		<b>Total</b>	0.10	0.40	0.00	0.10	0.40	0.00		
AFR	Senegal	US	0.47	0.00	0.00	0.40	0.00	0.00	3.01	1.68
		European Commission	0.00	2.54	0.00	0.00	1.28	0.00		
	<b>Total</b>		0.47	2.54	0.00	0.40	1.28	0.00		
AFR	South Africa	US	0.20	0.00	0.00	0.20	0.00	0.00	0.20	0.20
		<b>Total</b>	0.20	0.00	0.00	0.20	0.00	0.00		
SAR	Sri Lanka	US	0.40	0.00	0.00	0.40	0.00	0.00	0.40	0.40
		<b>Total</b>	0.40	0.00	0.00	0.40	0.00	0.00		
AFR	Sudan	US	0.20	0.00	0.00	0.20	0.00	0.00	0.70	0.20
		AfDB	0.00	0.50	0.00	0.00	0.00	0.00		
	<b>Total</b>		0.20	0.50	0.00	0.20	0.00	0.00		
ECA	Tajikistan	Russia	0.54	0.00	0.00	0.00	0.00	0.00	5.84	0.30
		US	0.30	0.00	0.00	0.30	0.00	0.00		
	<b>Total</b>	World Bank	0.00	0.00	5.00	0.00	0.00	0.00		
			0.84	0.00	5.00	0.30	0.00	0.00		
AFR	Tanzania	US	0.82	0.44	0.00	0.82	0.44	0.00	1.27	1.27
		<b>Total</b>	0.82	0.44	0.00	0.82	0.44	0.00		
EAP	Thailand	Netherlands	0.00	0.10	0.00	0.00	0.10	0.00	8.78	7.88
		US	1.13	7.55	0.00	0.23	7.55	0.00		
	<b>Total</b>		1.13	7.65	0.00	0.23	7.65	0.00		
AFR	Togo	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	0.50	0.38
		<b>Total</b>	0.00	0.50	0.00	0.00	0.38	0.00		
ECA	Turkey	European Commission	0.00	10.60	0.00	0.00	5.30	0.00	46.40	6.63
		US	1.08	0.33	0.00	1.00	0.33	0.00		
	<b>Total</b>	World Bank	0.00	0.00	34.40	0.00	0.00	0.00		
			1.08	10.93	34.40	1.00	5.63	0.00		
ECA	Turkmenistan	US	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.10
		<b>Total</b>	0.10	0.00	0.00	0.10	0.00	0.00		
AFR	Uganda	US	0.65	0.39	0.00	0.65	0.39	0.00	1.04	1.04
		<b>Total</b>	0.65	0.39	0.00	0.65	0.39	0.00		
ECA	Ukraine	Estonia	0.01	0.00	0.00	0.01	0.00	0.00	5.18	4.64
		Russia	0.54	0.00	0.00	0.00	0.00	0.00		
	<b>Total</b>	US	3.65	0.99	0.00	3.65	0.99	0.00		
			4.20	0.99	0.00	3.66	0.99	0.00		
ECA	Uzbekistan	Russia	0.54	0.00	0.00	0.00	0.00	0.00	1.19	0.65
		US	0.30	0.35	0.00	0.30	0.35	0.00		
	<b>Total</b>		0.84	0.35	0.00	0.30	0.35	0.00		
EAP	Vietnam	Australia	0.00	5.35	0.00	0.00	0.92	0.00	87.81	29.60
		Canada	0.00	2.64	0.00	0.00	1.65	0.00		
		Czech Republic	0.20	0.00	0.00	0.20	0.00	0.00		
		Germany	0.00	4.98	0.00	0.00	0.00	0.00		
		Japan	0.00	8.08	0.00	0.00	0.00	0.00		
		Netherlands	0.00	1.41	0.00	0.00	1.41	0.00		
		Switzerland	0.00	0.40	0.00	0.00	0.40	0.00		
		US	8.41	4.96	0.00	8.36	4.96	0.00		
		World Bank	0.00	0.00	18.60	0.00	0.00	2.49		
		ADB	0.00	0.00	24.70	0.00	0.00	1.13		
		Finland	0.00	8.08	0.00	0.00	8.08	0.00		
		<b>Total</b>	8.61	35.90	43.30	8.56	17.42	3.62		
		MNA	West Bank Gaza	US	0.50	0.00	0.00	0.50		
World Bank	0.00			0.00	10.00	0.00	0.00	0.00		
	<b>Total</b>	AHIF	0.00	3.00	0.00	0.00	0.00	2.30		
			0.50	3.00	10.00	0.50	0.00	2.30		
AFR	Zambia	AHIF	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
		<b>Total</b>	0.00	1.00	0.00	0.00	0.00	0.00		
	<b>Grand Total</b>		79.63	213.74	236.00	66.65	109.22	30.22	530.54	206.41

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PHRD Committed (USD mil): 9.50

AHIF Disbursed (USD mil): 2.30

PHRD Disbursed (USD mil): 0.28

### Annex Table 3 : Details by Recipient International Organizations

AHI Pledge Results as of October 31, 2006 -- As Reported by Donors

Donor	WHO		FAO		OIE		UNICEF		a/ Other		Total	Total
	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements
Australia	0.92	0.92							1.15	1.15	2.06	2.06
Austria											0.00	0.00
Belgium	0.25	0.12	2.49	2.49							2.74	2.61
Canada									14.38	0.74	14.38	0.74
China	0.50	0.50	0.50	0.50							1.00	1.00
Cyprus	0.03										0.03	0.00
Czech Republic											0.00	0.00
Estonia											0.00	0.00
Finland	1.87	1.87									1.87	1.87
France	5.82	3.85	8.18	6.56	3.65	2.69					17.65	13.10
Germany	0.21										0.21	0.00
Greece	0.19	0.19	0.19	0.19							0.38	0.38
Hungary											0.00	0.00
Iceland	0.20										0.20	0.00
Ireland	0.62	0.62									0.62	0.62
Italy	1.50		3.00								4.50	0.00
Japan	2.00	2.00	11.28	11.16	8.75	8.15	49.10	49.10			71.13	70.41
Korea, Republic of	0.48	0.32									0.48	0.32
Luxembourg											0.00	0.00
Netherlands	3.49	0.27	0.62	0.62	0.13	0.07					4.24	0.96
Norway	2.89	2.89	3.72	3.72					3.84	3.84	10.45	10.45
Russia											0.00	0.00
Saudi Arabia			0.50	0.50							0.50	0.50
Singapore											0.00	0.00
Slovenia											0.00	0.00
Spain	2.49	2.49	1.07	0.49							3.56	2.98
Sweden	2.68	2.68	10.04	9.90							12.72	12.58
Switzerland	0.65	0.50	3.84	3.84	0.40				0.50		5.39	4.34
Thailand											0.00	0.00
United Kingdom	10.90	4.30	6.20	3.30	2.10				2.40	0.90	21.60	8.50
United States	33.38	33.38	7.31	4.24	1.20	0.90			2.63	2.63	44.51	41.14
European Commission											0.00	0.00
African Development Bank											0.00	0.00
Asian Development Bank	12.48	8.40	6.49	2.59							18.97	10.99
World Bank					1.00						1.00	0.00
<b>GRAND TOTAL</b>	<b>83.54</b>	<b>65.29</b>	<b>65.43</b>	<b>50.10</b>	<b>17.23</b>	<b>11.81</b>	<b>49.10</b>	<b>49.10</b>	<b>24.90</b>	<b>9.26</b>	<b>240.19</b>	<b>185.56</b>

a/ Other includes; UNDP Program (Finland), UN Appeal (Norway), UNSIC (UK), UN AI Coordinator, Institutes Pasteur Network

**Total Committed for Int. Org. (USD million) : 240.19**

**Total Disbursed for Int. Org. (USD million) : 185.56**

### Annex Table 4a: Detailed Breakdown by Donors

AHI Pledge Results as of October 31, 2006 -- As Reported by Donors

Donor	Countries					Regional Organizations					International Organizations				
	Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)	
		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans
Australia	Cambodia	0.00	1.45	0.00	1.45	Asia Pacific Economic Cooperation (APEC)	0.00	7.64	0.00	0.23	WHO	0.00	0.92	0.00	0.92
	China	0.00	0.38	0.00	0.38	Regional assistance - Asia	0.00	12.99	0.00	3.44	UNDP	0.00	0.38	0.00	0.38
	Indonesia	0.00	11.84	0.00	4.13	Pacific island nations	0.00	6.11	0.00	2.29	IFRC	0.00	0.76	0.00	0.76
	Korea, DPR	0.00	0.38	0.00	0.38	ASEAN	0.00	3.82	0.00	0.08					
	Myanmar	0.00	0.76	0.00	0.76										
	Papua New Guinea	0.00	4.66	0.00	0.00										
	Vietnam	0.00	5.35	0.00	0.92										
	<b>Total</b>	0.00	24.83	0.00	8.02	<b>Total</b>	0.00	30.56	0.00	6.04	<b>Total</b>	0.00	2.06	0.00	2.06
Austria															
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00
Belgium						ADB	0.00	0.25	0.00	0.25	WHO	0.00	0.25	0.00	0.12
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.25	0.00	0.25	<b>Total</b>	0.00	2.49	0.00	2.49
Canada	Vietnam	0.00	2.64	0.00	1.65						FAO/WHO	0.00	12.38	0.00	0.00
	Indonesia	0.00	4.13	0.00	4.13						PAHO	0.00	1.18	0.00	0.00
	<b>Total</b>	0.00	6.77	0.00	5.78	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.83	0.00	0.74
China											UNSC	0.00	14.38	0.00	0.74
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.50	0.00	0.50
Cyprus											FAO	0.00	0.50	0.00	0.50
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	1.00	0.00	1.00
Czech Republic	Vietnam	0.20	0.00	0.20	0.00						WHO	0.00	0.03	0.00	0.00
	<b>Total</b>	0.20	0.00	0.20	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.03	0.00	0.00
Estonia	Ukraine	0.01	0.00	0.01	0.00										
	<b>Total</b>	0.01	0.00	0.01	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00
Finland	Vietnam	0.00	8.08	0.00	8.08						WHO	0.00	1.87	0.00	1.87
	<b>Total</b>	0.00	8.08	0.00	8.08	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	1.87	0.00	1.87

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**Total Committed Annex 4a +4b (USD million): 1,358.60**  
**Total Disbursed Annex 4a + 4b (USD million) : 742.25**

	%	Disb.	%	Comm.
In Cash	63	465.67	75	1,018.16
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### Annex Table 4a: Detailed Breakdown by Donors

AHI Pledge Results as of October 31, 2006 -- As Reported by Donors

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	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Committed		Disbursed					
		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans				
France	Lao PDR	0.00	2.49	0.00	0.62	African Union	0.52	0.12	0.52	0.12	WHO	2.09	3.73	0.12	3.73				
	Cambodia	0.00	1.24	0.00	0.62		0.52	0.12	0.52	0.12		FAO	2.09	6.09	0.47	6.09			
	<b>Total</b>	0.00	3.73	0.00	1.24		<b>Total</b>	0.52	0.12	0.52		0.12	<b>Total</b>	5.22	12.43	0.71	12.39		
Germany	Laos	0.00	3.11	0.00	0.00						WHO	0.00	0.21	0.00	0.00				
	Cambodia	0.00	3.11	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00
	Romania	0.00	0.19	0.00	0.19							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Indonesia	0.00	4.98	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vietnam	0.00	4.98	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	0.00	16.36	0.00	0.19	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.21	0.00	0.00					
Greece											WHO	0.00	0.19	0.00	0.19				
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.38	0.00	0.38				
Hungary											WHO	0.00	0.19	0.00	0.19				
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00				
Iceland											WHO	0.00	0.20	0.00	0.00				
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.20	0.00	0.00				
Ireland	Lesotho	0.00	0.12	0.00	0.12						WHO	0.00	0.62	0.00	0.62				
	Ethiopia	0.00	0.12	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.62
	<b>Total</b>	0.00	0.24	0.00	0.12							<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.62
Italy											WHO	0.00	1.50	0.00	0.00				
											FAO	0.00	3.00	0.00	0.00				
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	4.50	0.00	0.00				

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	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Committed		Disbursed	
		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans
Japan	Nigeria	0.00	0.73	0.00	0.73	(ASEAN) Association of Southeast Asian Nations	0.00	46.80	0.00	46.80	WHO	0.00	2.00	0.00	2.00
	Vietnam	0.00	8.08	0.00	0.00	(ADB) Asian Development Bank	0.00	10.00	0.00	10.00	FAO	0.00	11.28	0.00	11.16
						(ECOWAS) Economic Community of West African S	0.00	0.05	0.00	0.05	OIE	0.00	8.75	0.00	8.15
	<b>Total</b>	0.00	8.81	0.00	0.73	<b>Total</b>	0.00	56.85	0.00	56.85	<b>Total</b>	0.00	71.13	0.00	70.41
Korea, Republic of	Korea, DPR	1.27	0.00	1.27	0.00						WHO	0.00	0.48	0.00	0.32
	Iraq	0.86	0.00	0.86	0.00										
	Indonesia	0.25	0.00	0.25	0.00										
	Nigeria	0.20	0.00	0.20	0.00										
	Mongolia	0.00	0.00	0.00	0.00										
<b>Total</b>	2.59	0.00	2.59	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.48	0.00	0.32	
Luxembourg	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00
Netherlands	China	0.00	0.04	0.00	0.04						WHO	0.00	3.49	0.00	0.27
	Indonesia	0.00	2.41	0.00	1.00						FAO	0.00	0.62	0.00	0.62
	Thailand	0.00	0.10	0.00	0.10						OIE	0.00	0.13	0.00	0.07
	Vietnam	0.00	1.41	0.00	1.41										
<b>Total</b>	0.00	3.96	0.00	2.55	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	4.24	0.00	0.96	
Norway											FAO	0.00	3.72	0.00	3.72
											WHO	0.00	2.89	0.00	2.89
											UN Appeal	0.94	1.56	0.94	1.56
											UNSCIC	0.00	1.34	0.00	1.34
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.94	9.51	0.94	9.51
Russia	Armenia	0.54	0.00	0.00	0.00										
	Azerbaijan	0.54	0.00	0.00	0.00										
	Belarus	0.54	0.00	0.00	0.00										
	Kazakhstan	0.54	0.00	0.00	0.00										
	Kyrgyzstan	0.54	0.00	0.00	0.00										
	Moldova	0.54	0.00	0.00	0.00										
	Tajikistan	0.54	0.00	0.00	0.00										
	Ukraine	0.54	0.00	0.00	0.00										
<b>Total</b>	4.86	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	

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		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	
Saudi Arabia						ASEAN	0.00	0.25	0.00	0.25	FAO	0.00	0.50	0.00	0.50	
						African Union	0.00	0.25	0.00	0.25						
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.50	0.00	0.50	<b>Total</b>	0.00	0.50	0.00	0.50	
Singapore	Indonesia	0.00	0.60	0.00	0.31											
	<b>Total</b>	0.00	0.60	0.00	0.31	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	
Slovenia																
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	
Spain											WHO	0.00	2.49	0.00	2.49	
											FAO	0.00	1.07	0.00	0.49	
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	3.56	0.00	2.98	
Sweden											WHO	0.00	2.68	0.00	2.68	
											FAO	0.00	10.04	0.00	9.90	
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	12.72	0.00	12.58	
Switzerland	Vietnam	0.00	0.40	0.00	0.40						WHO	0.00	0.65	0.00	0.50	
											FAO	0.00	3.84	0.00	3.84	
	<b>Total</b>	0.00	0.40	0.00	0.40	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	5.39	0.00	4.34	
Thailand						ACMECS (Cambodia, Lao PDR, Myanmar)	2.50	0.00	1.59	0.00						
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	2.50	0.00	1.59	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	
United Kingdom											WHO	2.80	8.10	2.80	1.50	
											FAO	0.00	6.20	0.00	3.30	
											OIE	0.00	2.10	0.00	0.00	
											IFRC	0.00	0.90	0.00	0.90	
											OCHA	0.00	1.10	0.00	0.00	
											UNSCIC	0.00	0.40	0.00	0.00	
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	2.80	18.80	2.80	5.70	

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		a/	b/	a/	b/		a/	b/	a/	b/		a/	b/	a/	b/	
		In Kind	Grants/Loans	In Kind	Grants/Loans		In Kind	Grants/Loans	In Kind	Grants/Loans		In Kind	Grants/Loans	In Kind	Grants/Loans	
United States	Afghanistan	0.00	1.13	0.00	1.13	African Regional Programs	2.51	0.00	2.19	0.00	WHO	33.38	0.00	33.38	0.00	
	Albania	0.50	0.00	0.50	0.00	Almaty Regional Platform - Kazakhstan	1.12	0.00	1.12	0.00	FAO	6.19	1.12	4.24	0.00	
	Angola	0.00	0.82	0.00	0.82	Americas and Caribbean	3.51	0.00	2.17	0.00	OIE	0.00	1.20	0.00	0.90	
	Argentina	0.00	0.90	0.00	0.90	Asia/Pacific/Near East	7.16	0.00	6.80	0.00	UN AI Coord	1.08	0.00	1.08	0.00	
	Armenia	2.56	0.38	2.56	0.38	Eastern Europe and Eurasia	2.48	0.00	2.16	0.00	Institutes Pa	1.55	0.00	1.55	0.00	
	Azerbaijan	0.75	0.00	0.75	0.00	Europe	0.40	0.00	0.00	0.00						
	Bangladesh	0.52	1.93	0.52	1.93	Regional Disease Detection Site - China	3.91	0.00	3.91	0.00						
	Bolivia	0.32	0.00	0.32	0.00	Regional Disease Detection Site- Egypt	4.35	0.00	4.35	0.00						
	Bosnia-Herzegovina	0.20	0.00	0.20	0.00	Regional Disease Detection Site - Guatemala	2.00	0.00	2.00	0.00						
	Brazil	0.00	0.90	0.00	0.90	Regional Disease Detection Site - Indonesia	2.40	0.00	2.40	0.00						
	Bulgaria	0.89	0.00	0.89	0.00	Regional Disease Detection Site - Kenya	4.50	0.00	4.50	0.00						
	Burkina Faso	0.20	0.00	0.20	0.00	Regional Disease Detection Site - Singapore	2.10	0.00	2.10	0.00						
	Myanmar	0.16	0.00	0.00	0.00	Regional Disease Detection Site - Thailand	6.48	0.00	6.48	0.00						
	Cambodia	6.11	3.45	5.90	3.45	Gorgas Institute - Panama	3.28	0.00	3.28	0.00						
	Cameroon	0.20	0.00	0.20	0.00	Research Activities in Southeast Asia	18.00	0.00	18.00	0.00						
	China (including Hong Kong)	1.67	6.47	0.93	6.28	Secretariat of the Pacific (SPC)	0.30	0.00	0.30	0.00						
	Congo (DRC)	0.12	1.01	0.12	1.01											
	Congo (ROC)	0.00	0.15	0.00	0.15											
	Cote D'Ivoire	0.07	0.40	0.00	0.40											
	Cyprus	0.50	0.00	0.50	0.00											
	Djibouti	0.10	0.00	0.10	0.00											
	East Timor	0.38	0.00	0.38	0.00											
	Egypt	0.63	0.00	0.56	0.00											
	Ethiopia	1.63	0.40	1.55	0.40											
	Georgia	0.81	0.38	0.81	0.38											
	Ghana	0.30	0.00	0.30	0.00											
	Greenland	0.09	0.00	0.00	0.00											
	Haiti	0.10	0.00	0.10	0.00											
	India	0.53	1.97	0.53	1.97											
	Indonesia	17.90	6.75	14.11	6.75											
	Iraq	0.41	0.48	0.00	0.48											
	Jamaica	0.03	0.00	0.00	0.00											
Jordan	0.03	0.00	0.02	0.00												
Kazakhstan	0.45	0.25	0.45	0.25												
Kenya	1.07	5.03	1.00	4.03												
Korea, ROK	0.00	0.33	0.00	0.33												
Kyrgyzstan	0.10	0.00	0.10	0.00												
Laos	4.70	2.99	4.45	2.99												

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		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		
United States	Libya	0.00	1.00	0.00	0.00										
	Macedonia	0.20	0.00	0.20	0.00										
	Malawi	0.15	0.00	0.15	0.00										
	Malaysia	0.00	0.96	0.00	0.96										
	Mali	0.25	0.00	0.15	0.00										
	Mexico	0.37	6.08	0.00	6.08										
	Moldova	0.86	0.00	0.86	0.00										
	Mongolia	0.44	1.10	0.44	1.10										
	Morocco	0.00	0.63	0.00	0.63										
	Mozambique	0.68	0.00	0.68	0.00										
	Myanmar	0.16	0.00	0.00	0.00										
	Nepal	0.32	0.00	0.32	0.00										
	Niger	0.20	0.00	0.20	0.00										
	Nigeria	1.60	0.76	1.52	0.76										
	Pakistan	0.13	0.83	0.00	0.83										
	Panama	0.10	0.00	0.00	0.00										
	Paraguay	0.02	0.00	0.01	0.00										
	Peru	0.00	0.83	0.00	0.83										
	Philippines	0.68	0.93	0.68	0.93										
	Romania	2.43	0.63	2.40	0.63										
	Russia	1.09	0.90	1.00	0.45										
	Rwanda	0.10	0.40	0.10	0.40										
	Senegal	0.47	0.00	0.40	0.00										
	South Africa	0.20	0.00	0.20	0.00										
	Sri Lanka	0.40	0.00	0.40	0.00										
	Sudan	0.20	0.00	0.20	0.00										
	Tajikistan	0.30	0.00	0.30	0.00										
	Tanzania	0.82	0.44	0.82	0.44										
	Thailand	1.13	7.55	0.23	7.55										
	Turkey	1.08	0.33	1.00	0.33										
	Turkmenistan	0.10	0.00	0.10	0.00										
	Uganda	0.65	0.39	0.65	0.39										
	Ukraine	3.65	0.99	3.65	0.99										
Uzbekistan	0.30	0.35	0.30	0.35											
Vietnam	8.41	4.96	8.36	4.96											
West Bank/Gaz	0.50	0.00	0.50	0.00											
<b>Total</b>		71.96	66.12	63.84	63.49	<b>Total</b>	64.49	0.00	61.74	0.00	<b>Total</b>	42.20	2.32	40.25	0.90

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**Total Committed Annex 4a +4b (USD million): 1,358.60**
**Total Disbursed Annex 4a + 4b (USD million) : 742.25**

	%	Disb.	%	Comm.
In Cash	63	465.67	75	1,018.16
In Kind	37	276.57	25	340.44
Total	100	742.25	100	1,358.60

**Annex Table 4a: Detailed Breakdown by Donors**

AHI Pledge Results as of October 31, 2006 -- As Reported by Donors

Donor	Recipient	Countries				Regional Organizations				International Organizations				
		Committed (USD million)		Disbursed (USD million)		Committed (USD million)		Disbursed (USD million)		Committed (USD million)		Disbursed (USD million)		
		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans	
European Commission	Chad	0.00	5.08	0.00	2.54	African Union African Livestock Platform (ALive)	0.00	27.94	0.00	0.00				
	Indonesia	0.00	17.78	0.00	0.00		0.00	10.16	0.00	0.00				
	Mali	0.00	2.54	0.00	1.28									
	Romania	0.00	0.64	0.00	0.64									
	Turkey	0.00	10.60	0.00	5.30									
	Nigeria	0.00	5.08	0.00	2.54									
	Senegal	0.00	2.54	0.00	1.28									
	Ghana	0.00	3.56	0.00	1.78									
	<b>Total</b>	0.00	47.82	0.00	15.36		<b>Total</b>	0.00	38.10	0.00				
African Development Bank	Benin	0.00	0.50	0.00	0.38									
	Burkina Faso	0.00	0.50	0.00	0.38									
	Cameroon	0.00	0.50	0.00	0.38									
	Chad	0.00	0.50	0.00	0.38									
	Côte d'Ivoire	0.00	0.50	0.00	0.00									
	Ghana	0.00	0.50	0.00	0.38									
	Mali	0.00	0.50	0.00	0.00									
	Niger	0.00	0.50	0.00	0.38									
	Nigeria	0.00	0.50	0.00	0.38									
	Sudan	0.00	0.50	0.00	0.00									
	Togo	0.00	0.50	0.00	0.38									
<b>Total</b>	0.00	5.50	0.00	3.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00

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	Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)				
		a/	b/	a/	b/		a/	b/	a/	b/		a/	b/					
		In Kind	Grants/Loans	In Kind	Grants/Loans		In Kind	Grants/Loans	In Kind	Grants/Loans		In Kind	Grants/Loans					
Asian Development Bank	Azerbaijan	0.00	0.00	0.00	0.05	ASEAN	0.00	0.34	0.00	0.90	WHO FAO	0.00	12.48	0.00	8.40			
	Cambodia	0.00	9.00	0.00	1.14		0.00	0.34	0.00	0.90		0.00	6.49	0.00	2.59			
	Indonesia	0.00	0.40	0.00	0.05													
	Lao PDR	0.00	6.00	0.00	1.16													
	Malaysia	0.00	0.40	0.00	0.05													
	Philippines	0.00	0.40	0.00	0.05													
	Vietnam	0.00	24.70	0.00	1.13													
	<b>Total</b>	0.00	40.90	0.00	3.63		<b>Total</b>	0.00	0.34	0.00		0.90	<b>Total</b>	0.00	18.97	0.00	10.99	
World Bank	Albania	0.00	5.00	0.00	0.00						OIE	0.00	1.00	0.00	0.00			
	Armenia	0.00	6.25	0.00	0.30													
	Azerbaijan	0.00	5.15	0.00	0.00													
	Georgia	0.00	7.00	0.00	0.70													
	Kyrgyzstan	0.00	4.00	0.00	0.30													
	Lao PDR	0.00	4.00	0.00	0.00													
	Moldova	0.00	8.00	0.00	0.50													
	Nigeria	0.00	50.00	0.00	20.00													
	Romania	0.00	37.70	0.00	0.00													
	Tajikistan	0.00	5.00	0.00	0.00													
	Turkey	0.00	34.40	0.00	0.00													
	Vietnam	0.00	18.60	0.00	2.49													
West Bank/Gaz	0.00	10.00	0.00	0.00														
<b>Total</b>	0.00	195.10	0.00	24.29	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	1.00	0.00	0.00				
<b>Total</b>	<b>Total</b>	<b>79.63</b>	<b>429.21</b>	<b>66.64</b>	<b>137.18</b>	<b>Total</b>	<b>67.51</b>	<b>126.72</b>	<b>63.85</b>	<b>64.66</b>	<b>Total</b>	<b>51.16</b>	<b>189.04</b>	<b>44.70</b>	<b>140.85</b>			

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**Annex Table 4b: Detailed Breakdown by Donors**

AHI Pledge Results as of October 31, 2006

Donor	AHI Facility					Other					Unallocated		
	Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	In Kind	a/ Grants/Loans
		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans			
Australia	AHI Facility	0.00	3.82	0.00	3.82						Unallocated	0.00	49.73
	<b>Total</b>	0.00	3.82	0.00	3.82	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	49.73
Austria											Unallocated	0.00	1.24
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	1.24
Belgium											Unallocated	0.00	0.12
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.12
Canada						Canada Asia Regional Emerging Infectious Diseases Project	0.41	12.38	0.00	0.25	Unallocated	0.00	53.11
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.41	12.38	0.00	0.25	<b>Total</b>	0.00	53.11
China	AHI Facility	0.00	2.00	0.00	0.00						Unallocated	0.00	7.00
	<b>Total</b>	0.00	2.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	7.00
Cyprus											Unallocated	0.00	0.00
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00
Czech Republic											Unallocated	0.00	0.00
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00
Estonia	AHI Facility	0.00	0.03	0.00	0.00						Unallocated	0.00	0.00
	<b>Total</b>	0.00	0.03	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00
Finland											Unallocated	0.00	0.00
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00
France						Institute Pasteur Network in Asia	0.00	11.44	0.00	2.49	Unallocated	0.00	7.58
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	11.44	0.00	2.49	<b>Total</b>	0.00	7.58

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AHI Pledge Results as of October 31, 2006

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	Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	In Kind	a/ Grants/Loans
		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans			
Germany						Pharmaceutical Industry	0.00	24.88	0.00	0.00	Unallocated	0.00	0.00
						Scientific Research Institutions	0.00	0.29	0.00	0.29			
						Scientific Research Institutions	0.00	4.35	0.00	1.71			
						Developing countries	0.00	4.98	0.00	0.14			
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	34.50	0.00	2.15	<b>Total</b>	0.00	0.00
Greece											Unallocated	0.00	0.37
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.37
Hungary											Unallocated	0.00	0.04
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.04
Iceland	AHI Facility	0.00	0.20	0.00	0.00						Unallocated	0.00	0.00
	<b>Total</b>	0.00	0.20	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00
Ireland											Unallocated	0.00	0.38
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.38
Italy											Unallocated	0.00	2.46
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	2.46
Japan						World Bank (through PHRD)	0.00	14.50	0.00	14.50	Unallocated	0.00	36.23
						Joint research with institutes, paid in yen (3.86 billion a year)	0.00	34.48	0.00	34.48			
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	48.98	0.00	48.98	<b>Total</b>	0.00	36.23
Korea, Republic of	AHI Facility	0.00	1.00	0.00	0.00						Unallocated	0.00	1.64
	<b>Total</b>	0.00	1.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	1.64
Luxembourg											Unallocated	0.00	1.49
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	1.49
Netherlands						Dutch participation in International Firebrigade (4 years)	0.00	1.49	0.00	0.00	Unallocated	0.00	5.36
						Others: National Research The Netherlands	0.00	5.22	0.00	0.87			
						Others: Technical missions	0.00	0.37	0.00	0.12			
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	7.08	0.00	0.99	<b>Total</b>	0.00	5.36
Norway											Unallocated	0.00	0.85
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.85
Russia	AHI Facility	0.00	3.00	0.00	1.00	Establishment of the WHO collaboration centre in Russian Federation	0.00	24.00	0.00	8.90	Unallocated	0.00	0.00
	<b>Total</b>	0.00	3.00	0.00	1.00	<b>Total</b>	0.00	24.00	0.00	8.90	<b>Total</b>	0.00	0.00

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		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans					
<b>Saudi Arabia</b>															
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00		
<b>Singapore</b>															
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00		
<b>Slovenia</b>	AHI Facility	0.00	0.04	0.00	0.00										
	<b>Total</b>	0.00	0.04	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00		
<b>Spain</b>															
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00		
<b>Sweden</b>															
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00		
<b>Switzerland</b>															
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00		
<b>Thailand</b>															
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	0.00	0.00		
<b>United Kingdom</b>	AHI Facility	0.00	6.60	0.00	6.60	Investment in AI World Reference Laboratory, VLA Weybridge	4.82	0.00	4.82	0.00	Unallocated	0.00	14.88		
						National Institute of Biological Standards and Control (on vaccine develo	1.20	0.00	1.20	0.00					
						Research into flu by Medical Research Council; some of this goes to coll	5.45	0.00	1.73	0.00					
	<b>Total</b>	0.00	6.60	0.00	6.60	<b>Total</b>	11.47	0.00	7.75	0.00	<b>Total</b>	0.00	14.88		
<b>United States</b>						Global Contingency, including emergency response	5.72	0.00	0.65	0.00	Unallocated	0.00	56.86		
						Global wild bird surveillance	5.00	0.00	5.00	0.00					
						Global communications and outreach	8.62	0.00	6.68	0.00					
						International coordination	20.35	0.00	12.78	0.00					
						Stockpile (non-pharmaceuticals)	66.63	0.00	64.07	0.00					
						International technical assistance	15.82	0.00	0.40	0.00					
						Humanitarian assistance	4.00	0.00	0.00	0.00					
						International research (vaccines, human-animal interface, modeling of in	4.07	0.00	4.07	0.00					
	<b>Total</b>	0.00	0.00	0.00	0.00	<b>Total</b>	130.21	0.00	93.64	0.00	<b>Total</b>	0.00	56.86		

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		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans		a/ In Kind	b/ Grants/Loans	a/ In Kind	b/ Grants/Loans			
European Commission	AHI Facility	0.00	58.42	0.00	29.21	Scientific Research Projects (mainly in EU)	0.00	35.94	0.00	17.97	Unallocated	0.00	22.33
						Centrally Managed TA Projects	0.00	5.08	0.00	0.45			
	<b>Total</b>	<b>0.00</b>	<b>58.42</b>	<b>0.00</b>	<b>29.21</b>	<b>Total</b>	<b>0.00</b>	<b>41.02</b>	<b>0.00</b>	<b>18.42</b>	<b>Total</b>	<b>0.00</b>	<b>22.33</b>
African Development Bank											Unallocated	0.00	9.50
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>Total</b>	<b>0.00</b>	<b>9.50</b>
Asian Development Bank						Others: Emergency Fund for Developing Countries	0.00	18.69	0.00	0.18	Unallocated	0.00	389.05
						Others: Multi-donors country team - assessment mission (consulting ser	0.05	0.00	0.00	0.00			
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>Total</b>	<b>0.05</b>	<b>18.69</b>	<b>0.00</b>	<b>0.18</b>	<b>Total</b>	<b>0.00</b>	<b>389.05</b>
World Bank												0.00	304.40
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>Total</b>	<b>0.00</b>	<b>304.40</b>
<b>Total</b>	<b>0.00</b>	<b>75.11</b>	<b>0.00</b>	<b>40.63</b>	<b>Total</b>	<b>142.14</b>	<b>198.08</b>	<b>101.39</b>	<b>82.35</b>	<b>Total</b>	<b>0.00</b>	<b>964.63</b>	

a/ In Kind may include technical assistance, supplies, equipments, commodities, workshops, training etc.

b/ All bilateral commitments and disbursements are in the form of Grants whereas ADB and WB amounts mainly include Loans and Credits.

**Total Committed Annex 4a +4b (USD million): 1,358.60**

**Total Disbursed Annex 4a + 4b (USD million) : 742.25**

	%	Disb.	%	Comm.
In Cash	63	465.67	75	1,018.16
In Kind	37	276.57	25	340.44
Total	100	742.25	100	1,358.60